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ACUTE MYOCARDIAL INFARCTION

A Study of 100 Consecutive Cases

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THIS study consists of detailed clinical observations on 100 consecutive cases of acute myocardial infarction at St. Luke's Hospital, New York City. Eighty-five of these patients were observed from one to ten years prior to the initial attack, for an average of four years, either on the wards or as outpatients. Follow-up studies of from one to four years were made on 64 of the 66 survivors.

The criteria used for making the diagnosis were those enumerated by Shillito et al.[1]: fever, tachycardia, leukocytosis, elevated sedimentation rate and electrocardiographic and blood-pressure changes.

So far as could be determined, the observers were dealing with the initial attack in each case. With the present study in view each patient was carefully observed, and detailed clinical and laboratory evaluations were made. Serial electrocardiograms were taken until the infarct was considered healed. Follow-up study consisted of a brief history, physical examination, blood pressure readings and electrocardiograms.

Thirty-four per cent of the patients died of the initial attack. The average length of life after admission was seven days, the longest thirty days, and the shortest seven hours.

There is considerable variation in the literature regarding the percentage of initially fatal cases, ranging from 20 to 47 per cent.[2-4] By the end of the first year 42 per cent of the patients in this series had died, 8 per cent from recurrent attacks.

INCIDENCE

Occupation

No correlation was found between the type of occupation or environment and the incidence of acute myocardial infarction. Rathe[4] found that persons living in rural areas were affected as often as those in urban areas.

Age

The average age of patients in the complete series was fifty-nine years. The oldest in the series was ninety and the youngest thirty-five years. The average age was sixty and a half years for patients who died during the initial attack, fifty-nine for those who died of a recurrence within a year of the initial attack and fifty-seven and a half for those who survived one year or more without recurrence. Patients in the initially fatal group were on the average three years older than those who survived more than a year, and one and a half years older than those who succumbed to a recurrence within a year of the initial attack.

The effect of age on immediate mortality has been pointed out by many observers, including Woods,[2] Levine,[3] Rathe,[4] Cooksey[5] and Baer et al.[6] In Bland and White's[7] ten-year follow-up the average age was sixty-one years for patients who died of the initial attack, fifty-seven (at the time of the initial attack) for those who died within ten years and fifty-one for those who survived ten years.

Sex

In this series there were 72 men and 28 women — a ratio of approximately 3 to 1, the usually accepted figure, although Willius[8] found a ratio of 7 to 1. Twenty men and 14 women died of the initial attack; the relatively higher mortality for the latter (50 per cent) than for the former (27 per cent) may be explained by the fact that the initial attack usually occurs later in women than in men. The average age at onset of the initial attack was sixty-three years for women and fifty-seven and three quarters for men, a difference of over five years. In cases in which the initial attack was fatal the average was sixty-five and a half years for women and fifty-eight

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for men. For women the immediate mortality was greater and increased with advancing years.

History

A past history of symptoms referable to the cardiovascular system was found in 84 per cent of cases, the average duration of the symptoms being four years. Dyspnea was the most frequent symptom, being present in 44 per cent of cases. Anginal pain was present in 40 per cent, and symptoms of cardiac decompensation of varying degrees in 12 per cent. Most of these cases had been observed at this hospital prior to the initial attack in decompensation. Other prominent symptoms were easy fatigability and palpitation, which are usually reported.[4] Hypertension was known to have existed in 74 per cent of cases.

Diseases appearing before the myocardial infarction were diabetes (13 per cent), syphilis (6 per cent), cerebral hemorrhage (5 per cent), and cancer (4 per cent). There were 3 cases of polycythemia vera, 2 of myxedema, 2 of glomerulonephritis, 2 of duodenal ulcer and 1 each of pernicious anemia and sprue. The presence of these diseases was demonstrated either in this hospital or by records from other hospitals. Three cases of cholecystitis were proved at operation, but 9 patients gave complaints suggestive of this condition. No patient on whom autopsy was performed showed evidence of acute or chronic cholecystitis. Some type of major surgical operation had been performed prior to the attack in 5 per cent of cases, but in no case did the onset of acute myocardial infarction appear to bear any relation to such procedures.

Symptoms

Chief Complaint

The most prominent chief complaint was pain, which occurred in some form in 79 per cent of cases; 56 per cent of patients gave substernal pain as the chief complaint, 12 per cent complained of substernal pain and dyspnea, and 8 per cent had epigastric pain. There were 2 cases of right-upper-quadrant pain. Dyspnea was the second most prominent chief complaint, occurring in 26 cases — alone in 7, with weakness in 4, and with orthopnea in 3. Other chief complaints were syncope (3 cases), overwhelming fatigue and weakness (2 cases) and nausea and vomiting (1 case). It is of interest that pain was not even mentioned as a chief complaint in 21 per cent of cases. Substernal pain was the chief complaint in 80 per cent of patients who survived and in only 50 per cent of fatal cases. Of the 8 cases with epigastric pain, 5 were fatal. Severe dyspnea and orthopnea occurred more frequently in the fatal than in the nonfatal cases.

Nature of Pain

Investigation of the nature of pain revealed the following types of substernal pain: constricting, of mild to moderate severity, 52 per cent; severe, crushing, 11 per cent; boring, 3 per cent; and choking, 3 per cent. Constricting pain occurred with equal frequency in the fatal and nonfatal cases. No correlation could be made between the intensity of pain and prognosis — of the 11 cases with complaint of severe to excruciating precordial pain, none was fatal. On the other hand, 21 per cent of the entire series of patients had no pain, of whom approximately 50 per cent died of the initial attack.

Epigastric pain was described in 8 cases; localization of pain in the epigastrium is apparently associated with a grave prognosis, for 5 of the 8 cases with this complaint were fatal.

Radiation of Pain

In this series radiation of pain occurred three times more frequently than nonradiation. The most frequent type was down the left arm. Other types were down the right arm, down both arms, up to the neck and into the jaw. When the pain occurred in the epigastrium or right upper quadrant, it did not radiate.

An attempt to correlate the radiation and death showed that radiation occurred in 83 per cent of nonfatal and 57 per cent of fatal cases; in the former, radiation was three times more frequent than nonradiation. Radiation to unusual areas occurred oftener in the nonfatal than in the fatal cases.

Duration of Pain

The time that elapsed between onset of pain and hospitalization varied considerably: seven and a half days for patients who had no pain, five and two thirds days for those who had intermittent, and eighteen hours for those with constant pain. Patients with pain were hospitalized earlier than those without pain, and, in general, patients who survived were hospitalized earlier than those who died.

Other Symptoms

Although pain was the outstanding chief complaint, other symptoms were prominent. Eighty-six per cent of patients had dyspnea of varying degrees, 50 per cent had weakness, and over 33 per cent had sweating. Nocturnal dyspnea, orthopnea, ankle edema, nausea and vomiting, which were present either singly or together in approximately 25 per cent of cases, appeared to have more effect than pain on the immediate prognosis, over 50 per cent of patients with these symptoms dying of the initial attack of infarction.

Physical Findings

Physical examination on admission disclosed poor heart sounds and congestive rales in approximately 75 per cent and cyanosis in slightly less than 50 per cent of cases. Edema of varying degrees and disturbances of heart rhythm were noted in 33.3 per cent. Eighteen patients had enlarged livers, and

15 severe congestive failure. Thirteen patients were in shock. Friction rubs were heard in 6 cases. Three patients had ascites.

In the initially fatal series, rales and poor heart sounds were almost constant findings. Cyanosis occurred in over 66 per cent. More than 50 per cent of all patients in this series had some disturbance of rhythm, as well as extrasystoles and gallop. Of the 6 cases with auricular fibrillation, 4 were fatal. Edema was found in 50 per cent, and an enlarged liver in 33 per cent of fatal cases. Severe congestive failure, which appeared in 33 per cent of fatal cases, was infrequent in patients who survived and in those in shock. Four of the 6 cases with friction rubs were fatal. All patients with ascites died of the first attack of infarction.

X-ray study revealed cardiac enlargement in 76 per cent of the series. Master et al.[9, 10] point out the importance of this factor in prognosis, a high percentage of patients with cardiac decompensation having enlarged hearts, the principal cause of death in coronary occlusion. They state that the favorable prognosis in young persons may well depend on the low incidence of cardiac enlargement. White and Bland[11] showed that there is a direct correlation between cardiac enlargement and mortality.

Although extrasystoles and gallop rhythm in themselves had no great effect on prognosis their persistence increased the gravity of the prognosis.[12]

There seemed to be a slight difference in the findings on admission between patients who died within a year and those who lived one year or more, disturbances in rhythm and signs of cardiac decompensation appearing more frequently in the former.

Pulse and Temperature

On admission the average pulse in the fatal cases was 115; rapid pulse usually persisted until death. The average rectal temperature for this group was 101.7°F., and the temperature remained elevated until death. In only 1 fatal case was there no evidence of tachycardia, and fever was present in all fatal cases.

The pulse in the surviving patients averaged 100 and remained rapid for an average of eight days; the temperature, which was slightly over 100°F. on admission, usually fell to normal on the ninth or tenth day — one or two days after the pulse returned to normal.

Blood Pressure

Hypertension occurred in 74 per cent of the entire series, a rate definitely greater than that expected for the general population in this age group. The incidence was roughly the same in fatal (71 per cent) and nonfatal (77 per cent) cases. Hypertension at the onset of the attack was a frequent finding, being present in 53 per cent of the series, and was noted oftener in the fatal (68 per cent) than in the nonfatal cases. Hypotension at the onset of the attack was a comparatively infrequent finding, occurring in 18 per cent of the cases.

A fall in blood pressure usually occurred following the attack, but the blood pressure often remained within hypertensive limits. The fall was usually immediate, but was sometimes delayed as long as seven days after the onset of the attack. An early return of blood pressure to normal or hypertensive levels was a good prognostic sign. The blood pressure usually did not return to its former levels in the fatal group. The number of survivors in whom the original hypertension recurred increased with time; 58 per cent had regained their hypertension by the second year. After recovery from the initial coronary occlusion the level of the blood pressure had no effect on the frequency of recurrence or on the ultimate prognosis.

Laboratory Findings

White-Cell Counts

The average white-cell count in the fatal cases was 20,000, reaching a peak by the second day. It invariably remained elevated until death. In the patients who survived, it averaged 13,000, the peak being reached on the first day, and the elevation being maintained for about ten days. The white-cell count was above 15,000 in 40 cases. Of the patients with counts between 15,000 and 20,000, 12 died and 12 survived. Of those with counts of 20,000 to 25,000, 5 died and 4 survived. Death occurred in all patients with counts over 25,000. The highest white-cell count was 39,000.

Sedimentation Rates

The erythrocyte sedimentation rate, which was elevated in 90 per cent of the nonfatal and in all the fatal cases, was in general no higher in the latter than in the former. Of the 38 patients whose rates exceeded 50 mm. per hour, 24 survived and 14 died. There were 5 cases with rates over 100 mm. pe hour, only 1 of which was fatal. The highest rate of 128 mm. occurred in a patient who survived.

Electrocardiograms

Tracings were taken on admission and subsequently on alternate days until stabilization, which usually occurred between the second and the third week. After discharge tracings were usually taken at intervals of three to six months.

Acute changes were found in all cases, 52 showing the anterior-apex type (Q_1 T_1), 40 the posterior-base type (Q_3 T_3) and 8 a combination of both types. The mortality was higher in the anterior-apex type (24 cases, or 47 per cent) than in the posterior-base type (15 cases, or 38 per cent). In patients with a combination of both types, the mortality was 100 per cent. Vander Veer and Brown[13] found a nearly equal occurrence of anterior and posterior infarction patterns, but a significant percentage of the fatal

cases were of the anterior variety. Levine and Rosenbaum[14] noted that anterior infarction was more frequent in the initial attack than later. In Baer and Frankel's cases[15] 52 per cent were of the anterior and 34 per cent of the posterior type. Rathe[4] observed a definite predominance of anterior and indeterminate electrocardiographic patterns in early fatal cases. Willius[8] and Master et al.[16] attached little prognostic significance to the localization of the infarct.

Persistent sinus tachycardia, which occurred in 16 cases, was seen twice as often in the fatal (11 cases) as in the nonfatal (5 cases). Nodal tachycardia appeared in 2 cases, both fatal. Auricular extrasystoles were present in 6 fatal and 7 nonfatal cases. Ventricular extrasystoles appeared in 15 nonfatal and 9 fatal cases. Auricular flutter was noted in 3 cases, all nonfatal. Auricular fibrillation appeared in 7 fatal and 3 nonfatal cases. Auriculoventricular block was found in 2 fatal and 4 nonfatal cases. Left bundle-branch block was present in 15 cases, 6 nonfatal and 9 fatal; 5 cases showed incomplete and 10 complete block. Right bundle-branch block and unclassified bundle-branch block occurred in 1 case each. The mortality was significantly higher in patients showing complete than in those showing incomplete block.

At the end of a month after the initial attack all electrocardiograms that had shown acute changes continued to show residua; this was also true of the three-month follow-up. By the sixth month 9, at the end of the first year 15, at eighteen months 21, and at the end of two years 38 per cent of the electrocardiograms had reverted to normal.

In the series of Master et al.[17] the electrocardiogram was normal in 21 per cent of cases within a year of the attack. The absence of typical electrocardiographic changes in the follow-up period is well discussed by Sussman and Dack[18] and by Parkinson and Bedford.[19]

In the recurrent cases, both fatal and nonfatal, electrocardiographic residua persisted in all but 1. There was no predominance of anterior over posterior type or evidence of the type of occlusion to be expected following the initial attack. Bundle-branch block was present in 4 of the 8 patients who developed fatal recurrences within a year. No other constant finding was present. The prognosis was found to be better if the changes were slight. Recurrence was rare in patients with normal electrocardiograms.

Clinical Course

Congestive failure was the most frequent condition complicating the hospital course. Thirty-three per cent of the patients either had such failure on admission or developed it while hospitalized. Fifteen per cent were admitted with failure already present, and 18 per cent developed it after admission.

In the fatal cases 10 patients (30 per cent) had cardiac failure on admission, and 12 (35 per cent) developed failure during the hospital course — a total of 22 cases, or 65 per cent. Woods and Barnes,[2] Levine,[3] Rathe,[4] and Falk[20] stress the frequency of congestive failure in fatal cases. In the nonfatal cases, 16 patients (25 per cent) either had decompensation on admission or developed it subsequently. In Rathe's[4] series decompensation occurred in 20.2 per cent.

Seventy-nine per cent of all patients had pain on admission, but intractable pain persisted in only 16 per cent. Such pain occurred in over 25 per cent of fatal and in only 10 per cent of nonfatal cases. Although no reference was found in the literature to the relation of persistence of pain to prognosis, the incidence in this series is significant.

Of the 6 patients admitted with auricular fibrillation, 4 died and 2 survived. This condition developed during the hospital course in 4 other cases, 2 of which were fatal. Fibrillation persisted until death in all fatal cases but stopped either spontaneously or following medication in all surviving patients. Askey and Neurath[21] pointed out that the prognosis is poor in patients with persistent fibrillation; they found this condition in 1 in every 12 cases as a complication of acute myocardial infarction. Fibrillation was present at some time in 10 per cent of the present series.

Pericarditis, as manifested by a friction rub with or without pain, occurred in 10 per cent of the cases, 7 of which were fatal. Rathe[4] found pericarditis in 10 per cent of his cases. Pericardial friction rubs were reported by Shillito et al.[1] in 20 per cent of their cases, and by Blumer[22] in 21 per cent.

Bronchopneumonia occurred in 3 fatal and 4 nonfatal cases. Coma occurred in 6, all of which were early fatal cases. Pulmonary embolism occurred in 5 per cent, none of them fatal. In Falk's[20] series massive pulmonary embolism was given as one of the chief causes of death in coronary occlusion. A review of the autopsies in the present series, however, revealed only 1 case of pulmonary embolism. Cerebral hemorrhage occurred in 1 fatal and 1 nonfatal case.

In the fatal cases the average duration of life was eleven days after the onset of acute symptoms and seven days after hospitalization; the survivors were usually admitted earlier — on the average, three days after onset of the symptoms. Hospitalization was generally for six or seven weeks.

Follow-up Studies

Of the original 100 patients, 66 survived the initial attack and 58 were alive at the end of a year. Seventeen patients had recurrences within a year, 8 of which were fatal. Forty-nine patients had no recurrences within this period. Patients who died of recurrences within a year were older than those who survived, and those who had nonfatal recur-

rences within this period were older (fifty-nine years) than those who had no recurrences (fifty-seven years). Men appeared more susceptible to fatal recurrence than women. The number of recurrences varied between one and three, the majority having only one in the period of observation.

The symptoms of cardiac decompensation were outstanding in the cases of fatal recurrence. Eighty-seven per cent were either on digitalis or had some symptoms of cardiac decompensation. Angina was present in only 50 per cent of this group.

In the cases of nonfatal recurrence angina was the outstanding symptom, being present in 88 per cent. Forty-four per cent of these patients either were on digitalis or had some symptom of cardiac insufficiency. Only 16 per cent of patients without recurrence either were on digitalis or had some symptom of cardiac insufficiency. Angina was present in approximately 50 per cent of these cases. Other complaints were infrequent, 22 per cent of these patients having no symptoms.

It is striking to note that the symptoms of cardiac insufficiency were most frequent among the fatally recurrent cases (75 per cent), much less frequent in patients who had nonfatal recurrences (33 per cent) and almost negligible in those who had no recurrence (8 per cent). Some degree of dyspnea was a fairly constant complaint in all three categories. Angina was more frequent in the cases of nonfatal recurrence than in either those of fatal recurrence or those of nonrecurrence.

In more than 50 per cent of Rathe's[4] late fatal cases the patient had congestive heart failure; of the survivors only 20 per cent had this condition. In Bland and White's[7] ten-year follow-up study, of the 30 per cent who survived 33.3 per cent had complete recovery, 33.3 per cent had angina, and 33.3 per cent had dyspnea.

No correlation could be made between the severity of the symptoms in the initial attack and the number of recurrent attacks, except for the cases of cardiac decompensation. The severity of the symptoms did not increase with the recurrences, whereas the incidence of decompensation did increase, and the prognosis was worse for those who had this condition. Decompensation, which was often not present during the first attack, usually appeared during the second.

Over 50 per cent of the patients who survived a year, with or without recurrence, were working, either full or part time. This percentage is lower than that given by Cooksey,[5] who found that more than 75 per cent of the survivors returned to a useful occupation. Master et al.,[17] in a series of 202 cases, reported that 50 per cent of the survivors were able to return to work.

Autopsy Findings

The results of autopsy were reported in 18 cases, 15 in the initially fatal and 3 in the recurrent group. In all cases there was evidence of acute myocardial infarction, with the exception of 1 case in which a healed infarction was found. Sixteen cases showed definite evidence of coronary occlusion. In only 1 case was there evidence of occlusion of both arteries. The left coronary artery was involved in 62 and the right in 38 per cent.

In Baer and Frankel's[15] series 70 per cent showed anterior, 23 per cent posterior, and 7 per cent anteroposterior occlusion.

Mural thrombus, ruptured posterior wall of right ventricle, aneurysm of left ventricle and interventricular septum, pericarditis and pulmonary embolism were found in 1 case each. In no case did autopsy show the gall bladder to be involved, although 3 patients had complained of gall-bladder symptoms during life.

Summary and Conclusions

Clinical observations in 100 cases of acute myocardial infarction are presented.

The older the patient at the time of the initial attack, the more serious the prognosis. The incidence was higher among men than among women, but mortality was higher among women, whose attacks tended to occur later in life.

In patients who gave a past history of cardiac decompensation the mortality was higher. The long-standing presence of angina or dyspnea had no particular influence on the prognosis.

Although pain was an outstanding chief complaint, it was not present in 21 per cent of the cases. In the fatal cases only 25 per cent of patients had severe precordial pain. Excruciating precordial pain, if not intractable, did not carry a poor prognosis; intractable precordial pain and epigastric pain occurred often in the fatal cases. Radiation of pain had no relation to mortality.

The symptoms of excessive dyspnea, orthopnea, nausea, vomiting, excessive fatigue or weakness were found in over half the initially fatal cases. Such symptoms appeared to be more significant than pain in the immediate prognosis.

The physical findings of edema, enlarged liver, ascites and disturbances of rhythm carried a poor prognosis. Fever and tachycardia were always present in the initially fatal cases.

The incidence of hypertension was greater in patients with coronary occlusions (74 per cent) than in the general population. There was no correlation, however, between antecedent hypertension and mortality rate.

The sedimentation rate, which was of help in establishing the diagnosis, was elevated in 90 per cent of cases. The height of the sedimentation rate, however, bore no relation to the prognosis. The white-cell count, which was of help in both diagnosis and prognosis, was elevated in 90 per cent of the initially fatal and in 70 per cent of the nonfatal cases. With counts between 20,000 and 25,000

the prognosis was grave, but with those above 25,000 the mortality was 100 per cent.

Electrocardiographic evidence of involvement of the left coronary artery was more frequent (52 per cent) than that of the right coronary artery (40 per cent), and the mortality was higher in patients with the former. Persistent sinus tachycardia, auricular fibrillation and complete bundle-branch block carried a grave prognosis. Stabilization of the electrocardiogram following the acute changes occurred by the beginning of the third week. Persistence of residua in the follow-up electrocardiograms was more frequent in the recurrent than in the nonrecurrent cases. There was no recurrence in cases in which the electrocardiograms reverted to normal.

Cardiac decompensation developed during the hospital course in over half the fatal cases and in less than one fifth the nonfatal cases. Patients who developed the signs of pericarditis had a high mortality; those who were admitted in coma or who went into coma died.

The older the patient at the time of the initial attack, the greater the likelihood of recurrence. Men succumbed to recurrences oftener than women. Cardiac decompensation was more frequent in patients with either fatal (87 per cent) or nonfatal (47 per cent) recurrences.

Findings at autopsy confirmed the predominance of involvement of the left (62 per cent) over that of the right coronary artery (38 per cent) shown by electrocardiogram.

References

1. Shillito, F. H., Chamberlain, F. L., and Levy, R. L. Cardiac infarction: incidence and correlation of various signs, with remarks on prognosis. *J. A. M. A.* **118**:779-781, 1942.
2. Woods, R. M., and Barnes, A. R. Factors influencing immediate mortality after acute coronary occlusion. *Am. Heart J.* **24**:4-16, 1942.
3. Levine, S. A. *Clinical Heart Disease.* Third edition. 462 pp. Philadelphia: W. B. Saunders Company, 1945. P. 114.
4. Rathe, H. W. Myocardial infarction: clinical features and prognosis. *J. A. M. A.* **120**:99-103, 1942.
5. Cooksey, W. B. Coronary thrombosis: follow-up studies with especial reference to prognosis. *J. A. M. A.* **104**:2063, 1935.
6. Baer, S., and Frankel, H. Studies in acute myocardial infarction. I. Clinical picture and diagnosis. *Ann. Int. Med.* **20**:108-114, 1944.
7. Bland, E. F., and White, P. D. Coronary thrombosis (with myocardial infarction) ten years later. *J. A. M. A.* **117**:1171-1173, 1941.
8. Willius, F. A. Life expectancy in coronary thrombosis. *J. A. M. A.* **106**:1890-1894, 1936.
9. Master, A. M., Dack, S., and Jaffe, H. L. Age, sex and hypertension in myocardial infarction due to coronary occlusion. *Arch. Int. Med.* **64**:767-786, 1939.
10. *Idem.* Coronary thrombosis: investigation of heart failure and other factors in its course and prognosis. *Am. Heart J.* **13**:330-361, 1937.
11. White, P. D., and Bland, E. F. Further report on prognosis of angina pectoris and of coronary thrombosis: study of five hundred cases of former condition and of two hundred cases of latter. *Am. Heart J.* **7**:1-14, 1931.
12. Thompson, W. P., and Levine, S. A. Diastolic gallop rhythm: note on certain factors influencing prognosis. *Am. Heart J.* **11**:129-134, 1936.
13. Vander Veer, J. B., and Brown, L. E., Jr. Diagnosis and prognosis of coronary occlusion: electrocardiogram as aid. *Pennsylvania M. J.* **39**:303-309, 1936.
14. Levine, S. A., and Rosenbaum, F. F. Prognostic value of various clinical and electrocardiographic features of acute myocardial infarction. II. Ultimate prognosis. *Arch. Int. Med.* **68**:1215-1231, 1941.
15. Baer, S., and Frankel, H. Studies in acute myocardial infarction. III. Diagnosis and location of infarct by electrocardiogram. *Arch. Int. Med.* **73**:286-289, 1944.
16. Master, A. M., Jaffe, J. L., and Dack, S. Treatment and immediate prognosis of coronary artery thrombosis (267 attacks). *Am. Heart J.* **12**:549-562, 1936.
17. Master, A. M., Dack, S., and Jaffe, H. L. Cardiac efficiency and prognosis following recovery from acute coronary occlusion: results of various functional tests. *J. A. M. A.* **120**:1271-1278, 1942.
18. Sussman, M. L., and Dack, S. Roentgenkymogram in myocardial infarction. III. Cases with normal electrocardiogram. *J. Mt. Sinai Hosp.* **8**:1064-1070, 1942.
19. Parkinson, J., and Bedford, D. E. Successive changes in electrocardiogram after cardiac infarction. *Heart* **14**:195-239, 1928.
20. Falk, O. P. J. Causes and prevention of sudden death in coronary disease. *J. A. M. A.* **119**:1250-1252, 1942.
21. Askey, J. M., and Neurath, O. Prognostic significance of auricular fibrillation in association with myocardial infarction. *Am. Heart J.* **29**:575-580, 1945.
22. Blumer, G. Pericarditis epistenocardica. *J. A. M. A.* **107**:178-181, 1936.

USE OF SULFADIAZINE IN PRESENCE OF HEMATURIA

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IT is the purpose of this paper to discuss the renal reactions that occur after administration of sulfadiazine and to determine whether the clinical criteria generally accepted as indications for discontinuance of the drug are justifiable.

The principal toxic reaction to sulfadiazine is renal irritation. Plummer and Wheeler[1] reported that of 705 patients receiving 2 to 4 gm. initially, followed by 1 gm. every four hours for not less than two and not more than fourteen days, 8 per cent showed definite evidence of toxicity to sulfadiazine, and that 4.8 per cent had renal irritation. Thus, more than half the cases of toxicity to the drug were due to renal irritation. Of 244 patients given one or more intravenous injections of sodium sulfadiazine, 12.3 per cent had some form of reaction and renal reactions occurred in 7.4 per cent. Thus, with intravenous sodium sulfadiazine, the incidence of renal reaction was almost doubled. It was also shown that the incidence of toxicity was generally in direct proportion to the concentration of sulfadiazine in the blood.

Disturbance of renal function resulting from sulfonamides has been well classified by Murphy et al.[2] into two types, the first of which comprises mechanical complications produced by masses of crystals of the sulfonamide compounds in the kidney tubules, pelves and ureters. This type may be further subdivided into the extranephric, in which the concretions causing obstruction are within the pelves of the kidneys or in the ureters, and the intranephric, in which the concretions are in the kidney substance itself. The second category includes toxic intrarenal lesions without mechanical obstruction. Such lesions occur within the kidney and may be attributed to the toxic effect of the sulfonamide compound on the parenchymal tissues. This class may be divided into three groups representing different phases of the same reaction and not distinct divisions — simple tubular degeneration, necrotic tubular degeneration and glomerular changes. In some cases there is evidence of obstructive and toxic parenchymal changes in the same kidney.

This brings up the question of the clinical manifestations that are indications for the discontinuance of sulfadiazine. The urinary reactions to sulfadiazine are microscopic hematuria, gross hematuria, renal pain (usually pain similar to that in renal infarction and typical ureteral colic), oliguria and anuria. There is divided opinion regarding which of these conditions demand discontinuance of the drug. The appearance of microscopic or macroscopic hematuria, renal colic or anuria has been held to be a definite indication for stoppage of the drug.[3, 4] On the other hand, microscopic hematuria[5] and ureteral colic[6] have not been considered definite contraindications to its continuation.

In an attempt to determine just what clinical criteria should be used in ascertaining whether the drug should be discontinued in the presence of renal complication resulting from sulfadiazine therapy, the renal reactions resulting from such therapy on the meningitis service of the Fort McClellan Regional General Hospital were reviewed.

The incidence of urinary complications is generally quite high in patients with meningococcal meningitis or meningococcemia, the reported percentages varying from 5 to about 26 in large groups of patients.[5–8] This incidence would be lower if microscopic hematuria were not considered a complication. In smaller series no renal reactions were encountered.[9]

At this hospital all patients with meningococcal infections are given an initial oral dose of 4 gm. of sulfadiazine, followed by 2 gm. every four hours. Frequently, oral administration is not possible because of vomiting or because of the semistuporous and maniacal condition of the patient. In such cases, an initial intravenous dose of 5 gm. of sodium sulfadiazine is given, followed by repeated intravenous injections in doses of 2.5 or 5.0 gm., the amount depending on the blood level, which is maintained at 10 to 15 mg. per 100 cc. In some cases it was impossible to maintain an adequate blood level by oral administration, but with improvement in the patient's general condition adequate blood levels were easily maintained. When oral administration was not possible intravenous sodium sulfadiazine was given. As pointed out by other observers,[10] marked and unpredictable variations in blood sulfadiazine concentration followed both intravenous injection and oral administration, although fluctuations were generally less marked with the latter route. This fact emphasizes what has often been stated, namely, that frequent determinations of the blood level are essential. During the first twenty-four hours, 10 to 20 gm. of sodium sulfadiazine was frequently given intravenously, and as much as 50 gm. within a period of three days.

Recently alkalies have been advocated as adjuvants to sulfadiazine. It has been shown that with an alkaline urine the solubility of both free and acetylated sulfadiazine crystals is markedly increased.[10] The recommendation has been made that

15 gm. of sodium bicarbonate, or various amounts of other sodium salts with equivalent available base excess, be given daily in divided doses of 2.5 gm. every four hours. In the treatment of approximately 200 patients whose urine was kept alkaline or neutral, no evidence of renal irritation or urinary-tract obstruction was encountered during treatment with sulfadiazine orally or with sodium sulfadiazine intravenously.[1] More recently, one-sixth molar sodium lactate solution has been administered parenterally to alkalinize the urine when sodium sulfadiazine was given parenterally; 1100 cc. of such

TABLE 1. *Data on 12 Patients with Meningitis Treated with Sodium Sulfadiazine in Combination with Sodium Bicarbonate or Hartman's Solution.*

Case No.	Day of Therapy	Urinary Findings			Amount of Sulfadiazine Administered		Blood Sulfadiazine Level	Fluid Intake	Fluid Output
		Reaction	Albumin	Sediment*	Intravenously	Orally			
		pH			*gm.*	*gm.*	*mg./100 cc.*	*cc.*	*cc.*
1	1	6.5	0	3-4 white cells	11	0	—	—	—
	2	7.5	+	10-15 red cells	3	18	12.2	—	—
	3	7.5	±	25-30 red cells	0	10	11.9	—	—
	4	7.5	0	Negative	0	6	11.9	—	—
2	1	5.5	0	—	10	2	13.8	3690	1140
	2	7.5	++	5-10 red cells	7.5	8	8.7	3270	2500
	3	7.5	++	40-50 red cells	0	12	12.7	4500	3360
	4	7.5	+	25-30 red cells	0	12	9.3	3120	3100
	5	7.5	0	Negative	0	12	17.6	3240	2160
3	1	7.5	0	2-3 white cells	10	13	12.0	—	—
	2	7.5	0	Rare red cells	0	6	14.6	—	—
	3	7.0	++	15-20 red cells and many sulfadiazine crystals	0	6	14.1	—	—
	4	6.5	+	Rare red cells	0	6	10.5	—	—
4	1	6.0	+	3-4 white cells	5	16	—	—	—
	2	6.0	+	1-5 white cells	0	12	—	—	—
	3	7.5	++	35-40 red cells	0	6	—	—	—
	4	7.5	0	Negative	0	6	—	—	—
	5	7.5	0	Negative	0	6	—	—	—
5	1	5.5	0	—	10	5	—	4200	1140+
	2	5.5	++	Gross blood	0	12	12.4	—	—
	3	7.0	+	8-10 red cells	5	18	7.7–17.5	—	—
	4	7.0	+	Negative	0	16	12.9	—	—
	5	5.5	—	25-40 red cells	0	7	15.2	—	—
	6	7.5	0	—	0	6	8.1	—	—
	7	7.5	0	—	0	6	6.4	—	—
6	1	7.0	0	Rare white cells	0	14	9.0	—	—
	2	7.0	0	Negative	0	9	6.5	—	—
	3	7.5	0	Negative	5	12	6.0	—	—
	4	7.5	++	Gross blood	0	12	12.8	—	—
	5	7.5	0	Negative	0	7	10.0	—	—
	6	6.5	0	Negative	0	6	7.3	—	—
	7	5.5	0	Negative	0	0	—	—	—
7	1	6.5	0	Negative	5	5	—	—	—
	2	7.0	++	Gross blood	0	6	12.7	—	—
	3	7.5	+	Red cells	0	6	7.1	—	—
	4	7.5	0	—	0	6	7.5	—	—
	5	7.5	0	—	0	6	—	—	—
8	1	Normal	0	1-2 red cells	5	11	—	—	—
	2	6.0	+	1-2 red cells	5	6	7.5	—	—
	3	7.5	++	Gross blood	0	6	6.5	—	—
	4	7.5	+	5-6 red cells	0	6	9.7	—	—
	5	7.5	+	5-6 red cells	0	6	10.0	—	—
	6	7.5	0	Negative	0	6	10.0	—	—
	7	7.5	0	Negative	—	—	—	—	—
9	1	7.0	0	Negative	13	0	15.4	5750	—
	2	7.5	+	Gross blood	3	11	11.3	4000	1980
	3	7.5	++	Gross blood	0	8	11.7	5680	3360
	4	7.5	0	Negative	0	6	12.0	3760	2250
	5	7.5	0	Negative	0	12	7.5	4100	2640
	6	7.5	0	Negative	0	12	8.3	3000	3050
	7	7.5	0	Negative	0	9	12.0	3120	2820
	8	7.5	0	Negative	0	6	12.2	4200	3300
	9	7.5	0	Negative	—	—	—	—	—
10	1	5.0	++	Hyaline and granular casts	—	—	—	7797	—
	2	6.5	++	Gross blood	0	7	25.3	5900	2950
	3	7.5	+	4-5 red cells	0	6	15.7	4000	2760
	4	7.5	0	Negative	0	6	8.5	—	—
	5	7.5	0	Negative	0	6	8.8	—	—
	6	7.5	0	Negative	0	6	8.8	—	—
	7	7.5	0	Negative	0	6	8.5	—	—
11	1	5.5	0	Negative	10	3	8.3	3300	1050
	2	7.5	0	Negative	7.5	4	9.3	—	—
	3	7.5	++	Gross blood	2	6	12.0	—	—
	4	7.5	++	Gross blood	0	7	7.0	3120	2550
	5	7.0	++	Gross blood	0	6	12.0	3840	3000
	6	7.5	++	Gross blood	0	6	10.0	5460	4620
	7	7.5	+	40-50 red cells	0	6	9.2	4800	4000
	8	7.5	0	Negative	0	6	9.7	4320	3310
	9	—	0	Negative	0	6	9.2	2400	2500
12	1				10	6	10.9	3420	2820
	2	5.5	++	Gross blood	—	—	—	—	—
	3	6.5	++	Gross blood	2.5	12	10.7	5040	3680
		7.5	+	15-20 red cells	0	12	12.0	—	—
		7.5	0	Negative	0	12	—	4320	2520
	4	7.5	0	Negative	0	12	12.1	—	—
	5	7.5	0	Negative	0	12	—	—	—
	6	7.5	0	Negative	0	12	15.3	—	—

*Numbers refer to those seen per high-power field.

a solution has an alkalinizing effect in the body equivalent to an oral dosage of 15 gm. of sodium bicarbonate, and 1000 to 1500 cc. renders the urine alkaline in patients with acidosis from acute infections. Once the urine is alkaline a total daily dosage of 1100 cc. of one-sixth molar sodium lactate solution, given in two twelve-hour injections, is sufficient to maintain alkalinity. It is reported that with this solution practically no renal irritations followed intravenous administration of sodium sulfadiazine.[11]

In this series of patients adequate hydration and alkalinization of the urine was obtained by the administration of at least 3000 cc. of fluids and by the use of alkalies. Twelve to 20 gm. of sodium bicarbonate was given orally in repeated equal doses every four hours. In the majority of cases 15 gm., divided into 2.5-gm. doses, was given every four hours. When patients were unable to take or retain anything by mouth, fluids were given intravenously. The alkalinity of the urine was generally maintained at pH 7.5 or higher, each specimen being tested with nitrazine paper to determine its reaction. When it was below pH 7.5, either Hartman's solution or one-sixth molar sodium lactate solution was given intravenously, or the amount of sodium bicarbonate was increased.

The laboratory findings in the cases in which renal reactions occurred during sulfadiazine therapy are presented in Tables 1 and 2. These cases were divided into groups.

Group 1 included the renal reactions occurring in a study of 50 cases of meningococcal meningitis and meningococcemia in which alkalinization was carried out by the use of sodium bicarbonate in the doses described above when oral medication was possible, and by the use of Hartman's solution when oral medication was impossible. When intravenous sodium sulfadiazine was given in a 5 per cent solution in distilled water it was immediately followed by either Hartman's or Ringer's solution in doses of 1000 or 1500 cc. In some cases 5 per cent glucose in normal saline solution was given.

Group 2 included 18 cases with similar diagnoses in which one-sixth molar solution of sodium lactate was used instead of Hartman's solution. In these cases, the sodium sulfadiazine was dissolved in the lactate solution to make a 1 per cent solution and was given intravenously. Generally no more than 2000 cc. of one-sixth molar solution of sodium lactate was given in a twenty-four-hour period.

In Group 1 there were renal reactions in 12 cases, 4 showing microscopic and 8 gross hematuria (Table 1). In Group 2 there were 2 cases of gross hematuria (Table 2).

A record of the fluid intake and output was not obtained in all cases. Charts had been kept at the patient's beds but were not incorporated in the clinical record. It was the rule to force at least 3000 cc. of fluids daily, and a check was made to see that the fluid output was at least 50 per cent of the intake.

Three of 4 cases with microscopic hematuria had a urinary alkalinity of pH 7.5, and in 6 of 10 cases with gross hematuria the reaction was pH 7.5.

In no case was the sulfadiazine stopped because of hematuria, either microscopic or macroscopic, and in all cases the urinary output was adequate. If the urine was not alkaline, attempts were made to render it so, either by an increase in the dose of sodium bicarbonate or by the administration of Hartman's or Ringer's solution. In cases in which one-sixth molar solution of sodium lactate was used the urinary reaction was always alkaline. When hematuria occurred in both groups an additional 1000 cc. of Hartman's, Ringer's or one-sixth molar lactate solution was given intravenously.

TABLE 2. *Data on 2 Patients with Meningitis Treated with Sodium Sulfadiazine in Combination with One-Sixth Molar Solution of Sodium Lactate.*

Case No.	Day of Therapy	Urinary Findings			Amount of Sulfadiazine Administered		Blood Sulfadiazine Level	Fluid Intake	Fluid Output
		Reaction	Albumin	Sediment*	Intravenously	Orally			
		pH			*gm.*	*gm.*	*mg./100 cc.*	*cc.*	*cc.*
1	1	Not recorded	0	Negative	15.0	6	10.4	4750	3570
	2	7.5	0	Negative	2.5	12	13.3	3650	3540
	3	7.5	—	Gross blood	0	12	12.7	4100	3180
	4	7.5	++	100-125 red cells	0	12	12.3	3600	3140
	5	7.5	0	Negative	0	12	10.6	2400	2520
	6	7.5	0	Negative	0	12	Not recorded	—	—
	7	7.5	0	Negative	0	12	11.4	—	—
	8	Not recorded	0	Negative	0	12	Not recorded	—	—
2	1	6.5	0	2-3 white cells	7.5	7	13.6	2220	1200
	2	7.5	++	Gross blood	0	14	9.1	2840	2340
	3	7.5	++	Gross blood	0	6	17.4	4820	4000
	4	7.5	0	1 red cell	0	6	9.7	4800	4040
	5	7.5	0	Negative	0	6	9.7	4560	4200

*Numbers refer to those seen per high-power field.

Discussion

In these 14 cases of renal irritation occurring during sulfadiazine therapy for meningococcal infections, 4 patients had microscopic and 10 gross hematuria. In spite of the hematuria, continuation of sulfadiazine therapy had no untoward effects, and in all cases the urine returned to normal. Such continuation of the drug in the presence of hematuria, particularly gross hematuria, is in disagreement with generally accepted procedure and calls for evaluation. Many cases of renal reaction from sulfadiazine, some fatal and others requiring either drastic treatment, such as ureteral and pelvic lavage and nephrostomy, have been reported in the literature.[12–20]

In all the cases reported in the literature the urinary output varied from definitely diminished to absent, and alkalinization of the urine was not attempted or was inadequate. Fox et al.[21] have pointed out the value of alkali therapy in the prevention of renal reactions, as well as the fact that adequate doses of alkalies must be given and that the required quantity of alkalies must be governed primarily by the reaction of the urine.

In spite of alkalinization of the urine, however, renal reactions from sulfadiazine occurred in the cases discussed above. To afford a good method of comparison, there is available the incidence of renal reactions at this hospital prior to the use of alkalies as adjunctive therapy, as reported by Marangoni and D'Agati.[6] In 46 cases of meningococcal infection in which both oral and intravenous sulfadiazine were given 26 per cent of patients showed toxic renal reactions. This was only a slightly higher incidence than that in cases in which oral sulfadiazine was used alone. But the dosage was larger than that ordinarily given, with blood sulfadiazine levels of 15 to 20 mg. per 100 cc. In a similar group of patients with alkaline urine, as reported above, there were renal reactions in approximately 13 per cent. This is an appreciable lowering of rate but is not in accord with other observations that alkalinization of the urine will check renal reactions. In none of the cases discussed above was there definite evidence of diminished urinary excretion or of renal colic, although renal colic may have been present in some cases for a fair percentage of the patients were semistuporous and disoriented and were therefore not easily observed; conscious and rational patients, however, gave no complaint that might have been interpreted as renal colic.

The renal irritation resulting from the use of sulfonamides is described above. Plummer and Wheeler,[1] however, in autopsies on 6 patients with renal irritation during sulfadiazine therapy who died of other causes, found concretions of the drug in the renal pelvis and deposits of the drug within the renal parenchyma, with tubular degeneration and interstitial inflammatory reaction and occasional secondary degeneration of the nephron; they believed that no permanent or serious impairment of renal function would have ensued in the patients examined.

The factors that might be expected to influence the occurrence of renal reactions from sulfadiazine are the total dosage of the drug and the route of administration, the fluid balance, the reaction of the urine and individual sensitivity to the drug.

Most renal reactions occurring during sulfadiazine therapy are due to mechanical complications resulting from crystallinization in the substance and pelves of the kidneys and in the ureters. Clinically, however, renal irritations due to mechanical complication and those caused by the toxic effect of the drug on the kidneys cannot always be differentiated. The presence of renal or ureteral colic and crystallinuria suggests mechanical complications, but such symptoms and findings may be absent and the only sign may be hematuria, oliguria or anuria, even though concretions of sulfadiazine crystals are responsible for the renal reactions.

The most significant finding in renal reactions from sulfadiazine is not the presence of hematuria, with or without crystallinuria, but urinary output and alkalinity. If the urine is kept alkaline and fluid balance maintained, sulfadiazine can be continued, as in all the cases discussed above, which cleared without any evidence of residual damage.

Conclusion

Hematuria, either microscopic or macroscopic, is not a contraindication to continued use of sulfadiazine provided there is no diminished urinary output and provided the urine is kept alkaline and the fluid balance is maintained.

References

1. Plummer, N., and Wheeler, C. Toxicity of sulfadiazine: observations on 1357 cases. *Am. J. M. Sc.* **207**:175-184, 1944.
2. Murphy, F. D., Kuzma, J. F., Polley, T. Z., and Grill, J. Clinicopathologic studies of renal damage due to sulfonamide compounds: report of 14 cases. *Arch. Int. Med.* **73**:433-443, 1944.
3. Keitzer, W. A., and Campbell, J. A. Renal complications of sulfadiazine. *J. A. M. A.* **119**:701-703, 1942.
4. Queries and Minor Notes. Sulfanilamide derivatives and urinary crystals. *J. A. M. A.* **117**:2296, 1941.
5. Appelbaum, E., and Nelson, J. Sulfadiazine and its sodium compound in treatment of meningococcus meningitis and meningococcemia. *Am. J. M. Sc.* **207**:492-507, 1944.
6. Marangoni, B. A., and D'Agati, V. C. Treatment of 134 cases of meningococcic infections with massive doses of sulfadiazine. *Am. J. M. Sc.* **207**:67-77, 1944.
7. Ochs, L., Jr., and Peters, M. Management of meningococcic infections at Station Hospital, Fort Benning, Ga. *War Med.* **4**:599-605, 1943.
8. Meyer, A. H. Meningococcic meningitis: report on 165 cases. *Ann. Int. Med.* **22**:543-545, 1945.
9. Grieco, E. H., and Cove, A. M. Meningococcic meningitis — sulfadiazine therapy (review of 20 cases). *Ann. Int. Med.* **21**:194-199, 1944.
10. Wheeler, C., and Plummer, N. Sulfadiazine and sodium sulfadiazine: comparison of certain of their clinical and pharmacologic values. *Ann. Int. Med.* **16**:269-285, 1942.
11. Gilligan, D. R., Dingwall, J. A., III, and McDermott, W. Parenteral use of sodium lactate solution in prevention of renal complications from parenterally administered sodium sulfadiazine. *Ann. Int. Med.* **20**:604-618, 1944.
12. Thompson, G. J., Herrell, W. E., and Brown, A. E. Anuria after sulfadiazine therapy. *Proc. Staff Meet., Mayo Clin.* **16**:609-612, 1941.
13. Schulte, J. W., Shidler, F. P., and Niebauer, J. J. Acute urinary suppression following sulfadiazine therapy. *J. A. M. A.* **119**:411-413, 1942.

14. Hellwig, C. A., and Reed, H. L. Fatal anuria following sulfadiazine therapy. *J. A. M. A.* **119**:561-563, 1942.
15. Bradford, H. A., and Shaffer, J. H. Renal changes in case of sulfadiazine anuria. *J. A. M. A.* **119**:316-318, 1942.
16. Raines, S. L. Ureteral obstruction following use of sulfadiazine. *J. A. M. A.* **119**:496, 1942.
17. Wright, D. O., and Kinsey, R. E. Renal complications due to sulfadiazine. *J. A. M. A.* **120**:1351-1354, 1942.
18. Gessler, C. N. Deaths from sulfonamides: clinical and pathological study, with report of 3 cases. *South. M. J.* **37**:365-372, 1944.
19. Louria, A. L., and Solomon, C. Complete anuria caused by sulfadiazine. *J. A. M. A.* **120**:1354-1356, 1942.
20. Finland, M., Peterson, O. L., and Goodwin, R. A., Jr. Sulfadiazine: further clinical studies of its efficacy and toxic effects in 460 patients. *Ann. Int. Med.* **17**:920-934, 1942.
21. Fox, C. L., Jr., Jensen, O. J., Jr., and Mudge, G. H. Prevention of renal obstruction during sulfadiazine therapy. *J. A. M. A.* **121**: 1147-1150, 1943.

THE USE OF ETHER IN THE NARCOANALYSIS OF PATIENTS WITH WAR NEUROSES

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THIS report deals with the technic and utility of ether in the treatment of war neuroses. Comparing ether to Pentothal, as used by Grinker and Spiegel,[1] Sargant and Shorvon[2] and Kelley[3] found the former more effective for ventilating repressed emotions in acute war neuroses. That ether is useful in psychotherapy for other reasons is suggested by Sargant and Shorvon and also by Rogerson[4] in his account of nitrous oxide narcoanalysis of civilian patients with acute and chronic anxiety. Between January and May, 1945, ether was used at the 5th General Hospital in France in the psychotherapy of 100 neuropsychiatric patients.

To comprehend the particular usefulness of ether one must understand the local problem of psychotherapy that existed at the hospital. The patients treated were, in general, combat soldiers who had been evacuated from the front for psychiatric reasons and who had spent from two to six weeks in other hospitals en route. In some cases Pentothal had been used at the forward hospitals; in others, the patients had received sedation and rest. On arrival at the 5th General Hospital, the patient usually presented a combination of certain persistent symptoms, such as anxiety and tremulousness, sensitivity to noise, anorexia, recurrent terrifying dreams and insomnia, irritability and, often, a generalized headache. In a small number of cases aphonia, weakness of the legs and other grossly hysterical symptoms were present, without external evidence of anxiety.

The selected patient received a two-week program of treatment. A medical examination was completed, and a brief psychiatric history was taken, with special attention to the circumstances immediately preceding the patient's psychiatric breakdown as well as to the content of his dreams, both of which supplied starting points for an ether interview. On the day after admission to the hospital, the patient received an ether interview, which was followed by two days of light sedation† during the afternoon and night and insulin therapy‡ in the morning. During the next three days the patient received insulin in the morning and group psychotherapy and physical exercises in the afternoon. After this period of treatment, he was transferred to a reconditioning company separated from the other hospital patients and under the command of a nonmedical officer, where he lived the life of a garrison infantry company and was assigned to duties necessary to the running of a hospital and peculiar to his own ability. After ten such days in the reconditioning company the patient was interviewed and re-evaluated by the psychiatrist.

The ether examinations were done in a semidarkened room. The patient was told in the morning that he would be interviewed in the afternoon with the aid of some medicine that would make it easy for him "to talk about his experiences." In preparation for ether, he received no food for six hours and 0.6 mg. of atropine sulfate subcutaneously half an hour before the interview. None of the major complications of ether administration occurred. It should be noted that patients as a rule did not receive sedation preceding the interview; in 5 patients who had received sodium amytal the day before the interview, only an ineffective emotional response could be obtained under ether.

Ether was administered by the open-drop method by a trained anesthetist. The patient was prompted by the psychiatrist to relate in chronologic order the events leading up to his psychiatric difficulties. Within two to five minutes the patient reached a mental state in which he was reliving his painful battlefield experience and expressing the emotion

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†After lunch, 0.4 gm. sodium amytal was given by mouth, and after supper, 0.6 to 0.8 gm.

‡About 30 units of regular insulin was injected subcutaneously at 10:00 a.m., producing mild symptoms of hypoglycemia, which were relieved by a high-calorie lunch at 12:30 p.m. The insulin therapy generally increased the patient's appetite, caused him to gain weight and reduced to a minimum the "hangover" associated with the use of sodium amytal.

associated with it. It was necessary for two to four attendants to restrain the patient during the excitement that generally occurred while he was reliving a traumatic incident. As soon as he had made the mental transition to a hypnotic state, ether administration was stopped. The patient subsequently remained in this state as long as the psychiatrist chose to maintain it. This allowed the psychiatrist to probe a traumatic incident, to recover the facts of the amnesic period frequent in such cases and to investigate the past history and its associated conflicts — in short, to abreact the patient at will and to the extent indicated. Occasionally the patient suddenly came out of the hypnotic state, and ether was readministered. In an hour's interview, it was sometimes necessary to administer ether once, twice or three times. The psychiatrist brought the patient out of the hypnotic state by reviewing chronologically the events leading up to admission to the hospital. Since the patient was conscious throughout the ether interview, he did not usually forget the material discussed during the abreaction.

Sometimes a patient is unduly slow in making the transition to the hypnotic mental state. When a patient who has been asked to narrate the events leading up to his mental breakdown begins to grow anxious or restless, the psychiatrist should intensify verbal, auditory or visual suggestion. Suddenly the patient talks in the present rather than the past tense, regards the psychiatrist as some person in his past experience, and is fully hypnotized. When difficulty is encountered in hypnosis particular factors should be considered. One is that the patient may be breathing with shallow respiration, making use only of his upper chest and thus indefinitely postponing the effect of the ether. To remedy the situation the psychiatrist should hold his hands against the lower lateral thorax and instruct the patient to take deep breaths; the patient thereby increases the excursion of respiration and inhales a larger quantity of ether.

Another factor to remember is that, during the ether induction, the psychiatrist may be suggesting to the patient a series of events that the psychiatrist thought, on eliciting the medical history, had been traumatic, but that actually had little emotional impact for the patient. For example, in giving his medical history preceding the ether interview, a patient states that he grew anxious during combat, that one day a shell burst near him and that he remembered nothing until he awoke in a hospital. The psychiatrist suggests these events during ether induction but finds that the mention of shellfire provokes little emotional response and that the patient remains unhypnotized. In that event, the psychiatrist should allow the patient to be etherized just short of unconsciousness and should then investigate further the medical history. Eventually he will discover the circumstances that are really charged with emotion for the patient — a shell burst near him on the battlefield, he saw his buddy torn to shreds, he burst into tears and grew confused, and finally he was carried on a litter to a hospital, where his mental state was found to be anxious, agitated and disoriented. These remarks are most applicable to a chronic neurotic patient for whom combat experience has precipitated symptoms but for whom the conflicts of civilian life are associated with a far greater emotional charge. During the ether interview, such patients may well, by a process of free association, change their train of thought from combat experience to the more significant episodes of earlier life.

It should be borne in mind that in any patient aspiration of stomach contents and apnea may occur during ether anesthesia, but the chance is slight if the patient has fasted for six hours and has been atropinized. It should not be attempted if the patient has a pulmonary infection. The factor of safety is further increased if the anesthetist is experienced and an oxygen tank and mask are available.[5] The complications mentioned above can develop quickly and unexpectedly and must be handled expeditiously and correctly. In general, however, ether is a safe drug for use in psychotherapy. Since it is absorbed and eliminated rapidly by the lungs, the level of anesthesia can be maintained easily and lowered more rapidly than that of intravenous drugs like Pentothal. It has been thought that the emotional excitement of patients during an ether interview is the same as that often seen in the surgical operating room during ether anesthesia. As Searles[5] points out, however, the latter excitement occurs during the primary stage of ether anesthesia — a state during which, by definition, the patient is unconscious. During the psychiatric interview under ether, on the other hand, the patient is always conscious. Therefore the psychiatric patient must be in a stage just short of the accepted primary stage of ether anesthesia. During this preprimary stage, Searles believes that auditory stimuli are greatly exaggerated. Hence, the auditory suggestions made by the psychiatrist must be aggravated to a frightening degree by the action of ether. This observation may explain why ether seems to precipitate a greater emotional response than Pentothal, which is a sedative as well as an anesthetic.

Under the qualifying circumstances described above, ether presented several striking attributes in the treatment of combat neuroses. The most prominent was that in most cases it precipitated quickly an intense emotional response, which is a prerequisite for successful abreaction.[6] A second attribute was that the ether produced a useful mental state for abreaction: the patient was conscious and alert during and after the interview, retaining a memory of what had transpired. Patients who have received Pentothal often grow

sleepy or groggy and subsequently remember nothing of the interview. The clinical value of abreaction is lost if the patient has amnesia for the procedure,[6] since the amnesia represents the same state of repressed emotions that existed preceding the interview. Finally, ether has a pharmacologic value: it is absorbed readily by the lungs, produces its clinical effect promptly, and is eliminated quickly and in large part by the lungs. Because of its rapid elimination it is possible to lighten the level of ether anesthesia speedily by controlling the quantity being given the patient; Pentothal does not have this advantage.

The ether interview provided a useful means of surveying the conflicts of a neurotic patient and selecting patients suitable for the two-week program of treatment, and was also useful in clarifying a diagnosis, as when a mute patient under ether appeared to suffer from a case of severe anxiety, hysteria or psychosis. Ether is contraindicated in severely agitated patients, however, in whom it may release a dangerous amount of anxiety.

Under the circumstances described above ether interviews were an adjunct in treatment of patients who had had little previous psychiatric difficulty but had developed moderate to severe anxiety during and after combat, and of those with hysteria. That ether was a significant factor in the therapeutic results obtained from the two-week treatment program outlined is suggested by the following statistics. Fifty neurotic patients received this two-week program of treatment except that the ether interviews were omitted; only 2 of these patients were capable of resuming duty overseas. One hundred similar patients received the two-week program of treatment, including the ether interviews. Of these, 50 were satisfactorily performing noncombat duty overseas one and two months after discharge from the hospital.

Summary

A technic of administering ether to the psychiatric patient is described.

Ether was found to have the following advantages: it produced an excessive emotional response and maintained a useful hypnotic state for abreaction.

An interview under ether was a quick and useful method of surveying the conflicts of neurotic patients coming to an Army general hospital from combat.

In the treatment of 100 such patients in France, selected for two weeks of psychotherapy, ether interviews were found to be a significant adjunct to treatment.

References

1. Grinker, R. R., and Spiegel, J. P. *War Neuroses in North Africa The Tunisian Campaign (January–May 1943)*. 300 pp. New York: Josiah Macy, Jr. Foundation, 1943.
2. Sargant, W., and Shorvon, H. J. Acute war neurosis: special reference to Pavlov's experimental observations and mechanism of abreaction. *Arch. Neurol. & Psychiat.* 54:231-240, 1945.
3. Kelley, D. McD. Personal communication.
4. Rogerson, C. H. Narco-analysis with nitrous oxide. *Brit. M. J.* 1:811, 1944.
5. Searles, P. D. Personal communication.
6. *The Neuroses in War*. Edited by E. Miller. 250 pp. New York: The Macmillan Company, 1940. Pp. 140-149.

ENHANCING THE RIBOFLAVIN CONTENT OF MARE'S MILK*

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ALTHOUGH cow's milk is generally considered one of the best natural sources of riboflavin, Holmes and his co-workers,[1] in a study of the vitamin content of mare's milk, found that draft (Percheron) mares produced milk containing extremely little riboflavin. The riboflavin levels varied from 0.05 to 0.20 mg. per liter of milk, with averages of 0.09, 0.11, and 0.13 mg. for the three mares used in the study. These values were less than one tenth those found for milk produced by cows that grazed in the same pastures and were fed hay grown in the same or adjacent fields to those that provided hay for the mares. Whether this difference in the riboflavin content of milk is related to the type of digestive tract of the two species — the cow is a ruminant, whereas the mare is a nonruminant — or whether some other factor is responsible is not known. Bechdel and his co-workers[2] and McElroy and Goss[3] demonstrated that cows synthesize vitamin B in the rumen. Wegner et al.[4] and Hunt and his associates[5] showed that these animals can synthesize riboflavin in the rumen. The amount that can be synthesized is influenced by the type of ration, corn being particularly favorable for the rumen synthesis of riboflavin. Since mares have no rumen, they cannot add to their milk riboflavin produced by this type of bacterial synthesis.

Until foals begin eating hay, grass and concentrates, the mare's milk is the total source of riboflavin. Hence, the low riboflavin content of mare's milk naturally raised a question concerning its adequacy for supplying the riboflavin requirements of rapidly growing foals. The literature that was consulted contained, however, no information concerning the riboflavin nutrition of young foals, and this study was undertaken to accumulate additional data regarding the possibility of increasing the riboflavin content of mare's milk by feeding crystalline riboflavin.‡

EXPERIMENTAL PROCEDURE

Three Percheron mares were available for this study. They were normal, active, well developed animals. Mare 1 was seven years old, weighed 1900 pounds and produced four foals; Mare 2 was fourteen years of age, weighed 1800 pounds and had produced ten foals; and Mare 3 was five years old, weighed 1430 pounds and had produced her first foal. None of the mares had been harnessed since the last foals were born. Accordingly, their food was utilized solely for their and the foals' body needs.

The experiment with Mares 1 and 2 was conducted during the summer months. During the night the mares received pasturage of rapidly growing green grass. During the day they were confined in a cool, shaded barn away from flies. The daytime feeding consisted of good-quality July-30-cut hay, mixed timothy, alfalfa and clover, three or four quarts of crushed oats and six or eight medium-sized ears of well cured white dent corn. The experimental period for Mare 3 was late winter and early spring, and her ration consisted of the same amounts of crushed oats and whole corn, with all the hay she desired.

Since riboflavin is only slightly soluble in water, a large volume of water would have been required for dissolving appreciable amounts of riboflavin and it would have been difficult to administer large amounts of liquid quantitatively. Accordingly, it was decided to feed the riboflavin in dry form. Since horses are particularly fond of sugar, this was used as a base. To prevent undesirable separation, both the sugar and the riboflavin crystals were ground to 100-mesh fineness and intimately mixed. The mixture was placed in No. 2 hard gelatin capsules, which were one third the size of a kernel of corn and somewhat larger than a crushed oat kernel. Thus, the amount of riboflavin contained in an individual capsule was relatively small. The capsules were mixed with the crushed oats. The mares were watched while they consumed their grain, and all the animals ate all the capsules.

During the sixteen-day prefeeding period, no crystalline riboflavin was fed. At its termination, Mare 1 was in the twenty-third week and Mare 2 in the thirteenth week of lactation. The riboflavin-containing capsules were administered for the next twenty-two days. During the first eight days each mare received 140 mg. of riboflavin daily, and for the next three days 160 mg. The amount was then increased to 350 mg. daily for nine days, after which the supply of riboflavin was nearly exhausted, and only 315 mg. was fed for the next two days. Thus, each mare received a total of 5.26 gm. of crystalline riboflavin during the twenty-two-day feeding period. The prefeeding period was twenty-four days for Mare 3; at that time she was in the seventeenth week of lactation. She was fed 100 mg. of riboflavin daily for fourteen days, and 200 mg. for the next fourteen days, after which she was unexpectedly removed

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from the experiment and it was not possible to feed a larger amount or to assay her milk following the discontinuance of riboflavin feeding.

When the mares and foals were taken to the barn from the night pasture, they were separated. Two hours later milk was collected for riboflavin assay. During the early part of the study, even though the mares' udders contained milk after they had been separated from the foals, it was impossible to obtain any milk from them. Consequently, the foals were returned to their dams. As a result, the mares gave their milk and a sample was collected for assay while the foal was nursing. As the study progressed, the foals became less dependent on milk and the

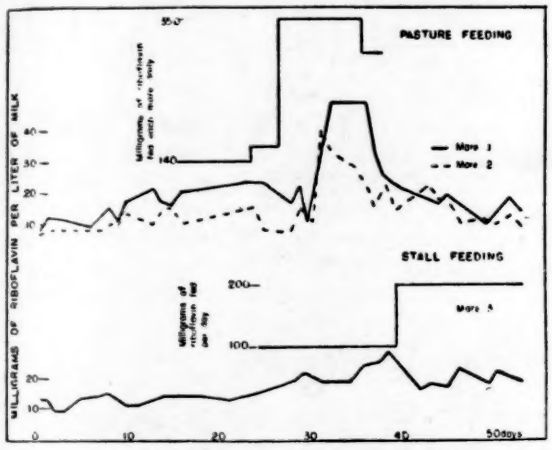

FIGURE 1. *Effect of Feeding Riboflavin on Its Presence in Mare's Milk.*

mares became more accustomed to the procedure and could be milked satisfactorily while the foals were separated from them. As soon as the sample was collected, it was taken directly to the laboratory, where riboflavin assays were started at once without the milk's being cooled. As is obvious, the quantity of milk available for analysis did not represent twenty-four-hour samples.

The riboflavin assay was conducted by the fluorometric method described by Holmes and Jones[6] for the assay of cow's milk.

RESULTS

The effect of the administration of crystalline riboflavin on the riboflavin content of mare's milk is shown graphically in Figure 1. The riboflavin content of the samples of milk obtained from each mare varied from day to day. During the prefeeding period, the riboflavin content averaged 0.13 mg. per liter for Mare 1 and 0.09 mg. for Mare 2. During the period in which the mares received 140 or 160 mg. of riboflavin daily, there was little increase in the riboflavin content. In contrast, after the mares had been receiving 350 mg. of riboflavin daily for four days, the riboflavin content of their milk suddenly increased to about four times that of the prefeeding period. In Mare 2, the maximum value was obtained on only one day, however, and the riboflavin content of the milk decreased day by day even before the riboflavin feeding was discontinued. The riboflavin content of the milk from Mare 1 likewise increased rapidly during the period of 350 mg. daily, but this level was maintained so long as the maximum quantity of riboflavin was administered. Following the withdrawal of the crystalline riboflavin, the amount of riboflavin in the milk rapidly decreased, and when the fifty-four-day study was terminated, the riboflavin content of the milk of both mares had returned to the prefeeding level. During the prefeeding period the milk from Mare 3 averaged 0.13 mg. per liter. The average for the fourteen days that she was fed 100 mg. of riboflavin daily was 0.22 mg., and while she was fed 200 mg., 0.20 mg. per liter. Since the experiment was unavoidably terminated at this point, no data were collected concerning the riboflavin content of the milk following riboflavin feeding.

DISCUSSION

The data obtained in this study revealed that it was possible to increase the riboflavin content of milk from draft mares by feeding large amounts of crystalline riboflavin, but the increase was of short duration and the amount in the milk rapidly returned to normal levels. It is evident from these observations that the oral administration of riboflavin to mares is not an efficient method of increasing the foals' intake of riboflavin. Instead, natural riboflavin can be administered by feeding the foal as much skimmed cow's milk as it will consume.

In considering the low efficiency in supplying riboflavin to the foal through feeding crystalline riboflavin to the mare, it is interesting to note some of the results obtained by investigators who fed large amounts of vitamin A to animals or human subjects. Deuel and his associates[7] succeeded in materially increasing the vitamin A content of milk from Holstein and Guernsey cows by feeding large amounts of vitamin A (shark-liver oil). In a later study, Hrubetz, Deuel and Hanley[8] obtained a 200 per cent increase in the vitamin A content of human milk by feeding 100,000 international units of vitamin A per day to women from the sixth month of pregnancy to the termination of lactation, and the high level of vitamin A was maintained throughout lactation. In the present study, the increased riboflavin content of the mare's milk was extremely transient, but it could possibly have been maintained if massive doses of riboflavin had been administered throughout lactation. No information, however, is available concerning the requirements of young foals for riboflavin, even though Pearson, Sheybani and Schmidt[9] state that riboflavin is a dietary essential for the horse, and Jones[10] and Jones, Maurer and Roby[11] report

that ophthalmia and other deficiency symptoms develop when horses are fed riboflavin-deficient rations for considerable periods.

Summary

The average riboflavin content of milk from two normal draft mares was determined for a fourteen-day pre-experimental period. Subsequently, a total 5.26 gm. of crystalline riboflavin was administered to each mare during a twenty-two-day feeding period. The riboflavin content of the milk increased about fourfold, but the increase was of short duration and the content soon returned to the pre-experimental level. When a third mare was fed 100 mg. of riboflavin daily for fourteen days, the riboflavin content of the milk increased from 0.13 mg. to 0.22 mg. per liter, but feeding of 200 mg. daily for the succeeding fourteen days produced milk that contained only 0.20 mg. per liter. It is evidently more efficient to administer riboflavin directly to the foal than through the mare's milk, but the young foal's requirements for riboflavin are not generally known.

I am indebted to Mr. Richard Nelson for his co-operation in caring for the mares, administering the riboflavin and collecting the samples of milk.

References

1. Holmes, A. D., McKey, B. V., Wertz, A. W. Lindquist, H. G., and Parkinson, L. R. Vitamin content of mare's milk. *J. Dairy Sc.* **29**: 163-171, 1946.
2. Bechdel, S. I., Honeywell, H. E., Dutcher, R. A. and Knutsen, M. H. Synthesis of vitamin B in rumen of cow. *J. Biol. Chem.* **80**:231-238, 1928.
3. McElroy, L. W., and Goss, H. Quantitative study of vitamins in rumen content of sheep and cows fed vitamin-low diets. *J. Nutrition* **21**: 163-173, 1941.
4. Wegner, M. I., Booth, A. N., Elvehjem, C. A., and Hart, E. B. Rumen synthesis of vitamin B complex. *Proc. Soc. Exper. Biol. & Med.* **45**:769-771, 1940.
5. Hunt, C. H., Kick, C. H., Burroughs, E. W., Bethke, R. M., Schalk, A. F., and Gerlaugh, P. Studies on riboflavin and thiamine in rumen content of cattle. *J. Nutrition* **21**:85-92, 1941.
6. Holmes, A. D., and Jones, C. P. Effect of sunshine upon ascorbic acid and riboflavin content of milk. *J. Nutrition* **29**:201-207, 1945.
7. Deuel, H. J., Jr., Hallman, L. F., Johnston, C., and Mattson, F. Effect of high vitamin A intake on blood and milk carotene of Holstein and Guernsey cows. *J. Nutrition* **23**:567-579, 1942.
8. Hrubetz, M. C., Deuel, H. J., Jr., and Hanley, B. J. Studies on carotenoid metabolism. V. Effect of high vitamin A intake on composition of human milk. *J. Nutrition* **29**:245-254, 1945.
9. Pearson, P. B., Sheybani, M. K., and Schmidt, H. Vitamin B requirements of horse. *J. Animal Sc.* **3**:166-174, 1944.
10. Jones, T. C. Research in animal diseases at Veterinary Research Laboratory, Army Remount Depot, Front Royal, Virginia. *Virginia Mil. Surgeon* **96**:310-314, 1945.
11. Jones, T. C., Maurer, F. D., and Roby, T. O. Role of nutrition in equine periodic ophthalmia. *Am. J. Vet Research* **6**:67-80, 1945.

MEDICAL PROGRESS

GOLD THERAPY IN RHEUMATOID ARTHRITIS*

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THE ease of evaluation of a therapeutic agent varies in proportion to the natural course of the disease for which it is to be used. In subacute bacterial endocarditis, which, if untreated, carries a nearly uniformly fatal prognosis, therapeutic success is evidenced by an appreciable increase in the survival rate. In lobar pneumonia, the specificity of the sulfonamides and penicillin has been established by a significant reduction in the mortality rate and rapid alterations in the clinical manifestations. The appraisal of therapy, however, in a benign, self-limited disease such as the common cold has been extremely difficult even in well controlled investigations. The last and most puzzling group to evaluate comprises chronic diseases of widely varying course and prone to spontaneous, unpredictable remissions and exacerbations. Examples of this group include bronchial asthma, peptic ulcer and rheumatoid arthritis. Nevertheless, from time to time, new methods of treating rheumatoid arthritis are claimed to have, if not specificity, at least a definite effect on the course of the disease. The early enthusiasm for each procedure is sooner or later dampened by the publication of critical, well controlled studies with essentially negative results.[1–3] An exception is gold therapy, introduced nearly twenty years ago, although its acclaimed specificity has occasionally been challenged in recent years.

The purpose of this report is not to present an inclusive review of the subject, which has been adequately performed elsewhere,[4–11] but to attempt to determine from the available evidence whether gold salts should be regarded as specific, as fulfilling an intermediate, adjuvant function or as having no established value. The harmful potentialities of gold treatment, including its toxicity, and the danger that, by dependence on gold alone, constitutional treatment and indicated orthopedic measures may be neglected must be carefully weighed.

Historical Development

Although gold has been found effective in certain experimental infections,[12] its clinical use in modern

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times has been largely confined to patients with tuberculosis, lupus erythematosus of the discoid type and rheumatoid arthritis. Landé[13] and Pick[14] in 1927 were the first to report on gold therapy in rheumatoid arthritis, but Forestier[15–18] was responsible for its popularization in France and other European countries, England and finally the United States. His employment of gold in rheumatoid arthritis was founded on two now generally discredited premises: that gold salts are effective in tuberculosis and that rheumatoid arthritis may be of tuberculous origin. The first British publication, by Slot and his co-workers[19] in 1934, was followed by two American reports[20, 21] in 1936. Since then, more than forty articles on chrysotherapy in rheumatoid arthritis have appeared in English, with conspicuously few adverse reports or opinions.[20, 22–27]

Mechanism of Action

It may be stated at the outset that the mechanism of action of gold in rheumatoid arthritis is unknown and that the explanations offered rest entirely on hypothesis. Hartung[28] reported that the serums of patients receiving gold show a marked increase in bacteriostatic power against a strain of hemolytic streptococcus. This finding does not furnish an explanation of the mode of action of gold, since the etiology of rheumatoid arthritis, whether or not infectious, remains unknown. Others postulate a stimulation of the defense mechanisms of the body, presumably by deposition of gold in reticuloendothelial cells.[29] No evidence has been presented that gold has an analgesic effect or decreases joint swelling through diuresis, either of which might explain some of its favorable action. In view of the remissions in rheumatoid arthritis associated with intercurrent hepatic jaundice,[30] it has been suggested that the effect of gold is mediated by the production of liver damage, but demonstrable toxic effects on this organ have been rare, except in one series.[4] Bayles and Riddell,[31] in an attempt to find a common denominator for remissions associated with jaundice, pregnancy and gold, could demonstrate no increase in plasma lipids in gold-treated patients with rheumatoid arthritis. Finally, an impression has been gained from the literature[24, 32, 33] that patients exhibiting toxicity have nevertheless fared especially well so far as their arthritis was concerned. Such observations have led to the theory that the action of gold may depend on mild "protein shock," similar to the temporary ameliorating effect of intravenous typhoid vaccine.

Pharmacology

Knowledge of the clinical pharmacology of gold is largely derived from the extensive investigations of Freyberg and his co-workers,[34, 35] whose reports are freely utilized in this section. Although over twenty gold compounds have been used therapeutically,[6, 36] only the preparations most frequently employed in recent years are discussed. All of them contain sulfur, but the gold content is believed to determine their therapeutic activity. Gold sodium thiosulfate (Allochrysine, Crisalbine and Sanocrysin) and gold sodium thiomalate (Myochrysine) are water-soluble salts. The former contains 37 per cent of gold and may be administered intravenously or intramuscularly, whereas the latter contains 50 per cent and is given intramuscularly. Both are absorbed with uniform rapidity and are regularly although slowly excreted. Gold thioglucose (Solganol B), although soluble in water, is administered in oil. This accounts for its slower and often variable absorption and the lower gold plasma levels observed, as compared with those seen in patients receiving other compounds of similar gold content (50 per cent). The same observation is true to an even greater extent of calcium thiomalate, which is insoluble in water, dispensed in oil suspension and also contains 50 per cent gold. Both salts, although apparently less toxic in the early stages of treatment owing to faulty absorption, may give rise to late toxicity, which is liable to be persistent and severe because of a relatively greater retention of gold associated with slow and irregular excretion.

Animal experiments suggest that the low plasma levels attained clinically with colloidal gold sulfide (Aurol-sulfide, containing 87 per cent of gold) are due to rapid disappearance of gold from the blood stream associated with phagocytization in reticuloendothelial cells, especially those of the liver and spleen.[35] Toxicity is thereby prevented, but opportunity for therapeutic action is minimized. In choosing a preparation for therapeutic use, the physician can logically adopt the conclusion that a water-soluble preparation should more readily reach the site of its action and, in addition, furnish warning of impending toxicity before the administration of an excessive amount.

Following absorption, gold is carried in an undetermined form in the protein fraction of the plasma. Its excretion is largely through the urine, although some appears in the stools. In spite of increasing accumulation in the body with repeated equal doses, plasma concentration remains relatively constant and excretion is increased only on the day of injection. Although the actual site of retention in the human body is not known, it is of practical importance that 70 to 80 per cent of the gold administered in a given period may be retained. Excretion may continue for months after the last injection, and may endure roughly in proportion to the amount given and to the rapidity of administration. Opportunity is thus presented for delayed and prolonged toxic manifestations. Snyder[37] cites a patient who developed a dermatitis that began one month after the last injection and persisted for nine months; she was still excreting gold five hun-

dred and ten days after treatment had been concluded.

It was mentioned above that water-soluble compounds are preferable for therapeutic use. In view of their rapid absorption, no advantage is gained by intravenous injections, which may cause a sudden — possibly toxic — increase in concentration in the kidneys. The most effective and safest scheme of dosage remains to be determined. The trend in recent years has been to decrease the maximum weekly dose from 50 mg. of metallic gold to 25[38–40] or even 12.5 mg.[41] It is believed that a smaller amount of gold in the body at any one time reduces the incidence, severity and duration of toxic manifestations.[35] Irrespective of the weekly dosage, a total of 500 mg. of metallic gold usually comprises one course, the interval between courses varying from one to three months. The practitioner is confronted with a dilemma at this point. He must weigh the possibility of delayed toxicity against the possibility that the disease will relapse with discontinuance of therapy. To overcome this difficulty, it has been suggested that small maintenance doses between courses be used[35, 41, 42] or that the drug be given continuously in small amounts for a prolonged period.[11]

Toxicity

The toxicity of gold compounds is fully described in a number of papers,[4, 43, 44] including Sundelin's[6] exhaustive monograph. The reported rates of toxicity range from 17 to 77 per cent, an average of 1 patient in 4 suffering some untoward effect. These reactions may involve almost every organ of the body, but the skin and mucous membranes (usually that of the mouth) are by far the most susceptible. Serious reactions include exfoliative dermatitis, hepatitis, colitis, purpura, agranulocytosis, encephalitis[37] and peripheral neuritis. An estimate made from a combined series of 1800 cases showed that 1 patient in 30 had a severe reaction and that 1 in 200 died as a result of gold therapy.[25]

In one series, a reduction in incidence and severity of toxic reactions was ascribed to the use of smaller dosages[35]; in another group similarly treated, however, there were 3 cases of exfoliative dermatitis and 2 of encephalitis among 100 patients.[33] There may be merit in beginning a course of therapy with small, gradually increasing amounts of gold so that sensitivity may be detected earlier and the reaction may be less severe and not so prolonged because of the presence of less gold in the body. Unfortunately, toxic manifestations may appear at the end of a course, may be delayed until the second or third course, or may even show up many months after the last injection. Toxicity is not related to the plasma level of gold, so that chemical control of administration cannot be employed.[35]

Owing to the unpredictability of reactions, it is believed that, with the exception of renal damage, they occur as an expression of sensitivity, either already present[37] or acquired during the administration of gold. Patch or intradermal tests are not helpful in determining which patients may be sensitive.[35, 45] Careful clinical and laboratory examinations prior to the institution of treatment and before each dose, with special attention to the kidneys, liver, blood-forming organs and skin, are the only available safeguards. Urticaria, eczema and colitis furnish additional contraindications to the use of gold.

Treatment of the reaction, once started, has not been successful, although sodium thiosulfate, vitamins C and D, a high-calcium diet and shifting the acid-base equilibrium in either direction have been used.[35] A trial of BAL (British Anti-Lewisite), which has proved effective in arsenic intoxication,[46] is indicated. In spite of all precautions, the administration of gold carries a constant risk of a disabling toxic reaction. This fact must be kept in mind in any discussion of therapeutic results.

Selection of Patients

It is generally agreed that the effectiveness of gold in arthritis is limited to the rheumatoid type. There is no indication for its use in degenerative joint disease, gouty arthritis or arthritis associated with specific infections. Whether or not ankylosing spondylitis is regarded as a variety of rheumatoid arthritis, its treatment with gold has, except for one report,[18] proved disappointing and therefore is usually not advised. Neither the age of the patient nor the duration of the disease is a factor in the selection of cases for treatment. Active arthritis should of course be present, but Forestier[18] states that symptomatic relief may be obtained in apparently burnt-out cases with marked deformity. Early cases usually respond more favorably than those of longer duration, but on this point there is also some disagreement.[5, 47] As pointed out below, patients in the early months of their first attack of rheumatoid arthritis are likelier to have spontaneous remissions irrespective of the treatment employed.[48] Therefore, a physician should not be criticized for delaying the use of a potentially dangerous drug at this stage of the disease.

Results of Treatment

Thirty-five papers in the English language on the results of gold therapy in rheumatoid arthritis have been reviewed. It is not possible to present the combined figures owing to the varying criteria utilized in judging improvement and the failure of some authors to state the degree of benefit obtained. An idea of the general trend may be gained, however, from the following percentages: gross improvement, of any degree — 84.0 per cent of 1943 patients; noteworthy objective improvement (usually a combination of the arrested and markedly improved group) — 59.3 per cent of 2924 patients;

and arrested, cured or in remission — 22.6 per cent of 1825 patients. In general, a fall in the sedimentation rate paralleled the degree of improvement, but in some patients who showed a marked clinical gain the rate was unchanged or rose.[49] In one study, in which untreated controls were used, an apparently greater tendency to a lowered rate was evidenced in all the gold-treated patients, whether or not they were clinically improved.[50]

The rates of improvement cited in the preceding paragraph are impressive, but several criticisms and queries are immediately suggested. The first concerns the selection of patients. Had they been observed sufficiently long prior to chrysotherapy to make a coincidental remission unlikely? Were the patients hospitalized or receiving other treatment? The second criticism pertains to the course of untreated rheumatoid arthritis when it is untreated or when only general measures are used. Was a control group utilized, or were control series available in the literature for comparison? Finally, was the improvement held so that the use of the word "arrest" rather than "remission" was justified, or did a large proportion of patients rapidly revert to their former state? In six reports, the patients selected were considered "refractory" and received no other treatment than gold.[5, 26, 40, 45, 51, 52] When the available figures from these reports are combined, 41.6 per cent of the patients showed marked objective improvement, and 8.3 per cent entered on a remission. These percentages are definitely less striking than those for the combined series (59.3 and 22.6 per cent respectively) and suggest that spontaneous remissions are a factor in the more favorable results given for unselected series.

In two series the authors used comparable control groups. Ellman, Lawrence and Thorold[53] gave to one group of 30 patients two courses of gold, with an average weekly dose of 200 mg. of Solganol B, to another, an average weekly dose of 100 mg., and to a third, a control group, injections of sterile oil. Although 76 per cent of the last group showed some improvement, compared to a total of 94 per cent in the two treated groups, in 37 per cent of the patients who received gold the disease became asymptomatic and the sedimentation rate returned to normal. These last results were realized in only 1 control patient. Objective improvement was also recorded more frequently in the treated patients, but the differences were not so striking. Those subjects receiving the larger dosage of gold showed a greate degree of improvement, but there was a corresponding rise in toxicity, with 1 death from agranulocytosis. Fraser[50] also divided his patients into two groups of about 50 each, one receiving an average weekly dosage of 100 mg. of Myochrysine and the other an ampule containing the same constituents but without gold. Until the final observations were recorded at the end of a year, neither the author nor the patients knew which preparation had been administered. The results of treatment showed that 82 per cent of the treated group and 45 per cent of the controls had obtained some degree of improvement but that this was "great" or "moderate" in 63 per cent of the former and in only 21 per cent of the latter. The conclusion is drawn by Fraser that the good results claimed for gold therapy by the majority of observers are unjustifiably high owing to the lack of adequate controls. The authors of these two papers recognize that the short period of observation, nine months and a year respectively, constitutes the chief objection to drawing final conclusions from their studies. They believe, however, that their results show that the improvement rate is definitely increased in a group of patients with rheumatoid arthritis by the administration of gold.

It is also worth while to compare the results recorded from gold with those reported for patients receiving other methods of therapy. Steinbrocker[48] recently emphasized the fact that rheumatoid arthritis most frequently pursues a fluctuant course and that the disease in any stage may recede and become inactive. Furlong[54] and others express the belief that, regardless of so-called "specific measures," 60 to 70 per cent of patients receiving general treatment show improvement. Sashin, Spanbock and Kling,[51] however, observed more favorable results in their gold-treated patients than in those previously treated by other methods. In 1938, Thompson, Wyatt and Hicks[55] reported on 274 patients treated in various ways (including vaccines, removal of foci of infection and transfusions); 12.8 per cent were not benefited, 76.5 per cent were moderately or markedly improved, and 6 per cent became entirely well. In a later paper,[40] 26 patients who had been refractory to the treatment employed in the 1938 report were given gold; 19 of these showed improvement, and 8 became quiescent. This is a small series, and comparable results were not obtained in a similar study of 50 patients by Snyder, Traeger and Kelly.[52]

In 1937, before gold had been used in the medical clinic of the Massachusetts General Hospital, a follow-up study was made of 274 patients who had been observed for periods ranging from six months to seven years. These patients had received only general and orthopedic treatment and, except for a small number, had been hospitalized only for a few weeks of study. The results are shown in Table 1. Improvement was not recorded unless it was objective and definite. Patients pursuing a fluctuating course with minor variations were placed in the stationary group. The figures of 16.4 per cent for those in remission and of 52.9 per cent for those improved may be informatively compared with the results reported from the combined series of gold-treated patients in the literature: 22.6 per cent in remission and 59.3 per cent with definite objective improvement. In addition, corroboration was ob-

tained of the likelihood of remission in early cases. Of 51 patients first seen within six months of the onset of their disease, 25 (49 per cent) were found to be in remission.

The tendency of a patient with rheumatoid arthritis who has shown improvement after one course of gold to relapse has been stressed since the original reports of Forestier.[16–18] Certain authors found that further treatment again brings about improvement in the majority of cases, with a net relapse rate of about 20 per cent,[4, 8, 19] but Freyberg[35] states that retreatment has proved less satisfactory. The most recent study of relapses following gold therapy was presented at the 1946 meeting of the American Rheumatism Association by Ragan and Tyson,[42] who reported on follow-up studies for at least three years of 142 patients, 50 per cent of whom had shown objective improvement following one or more courses of gold. Only 13 per cent had maintained their improvement for periods ranging from forty-five to seventy-eight months, and a five-year cure was obtained in only 9 cases. About 75 per cent of patients who had experienced objective improvement had relapsed, although usually not to a condition as severe as their original disease. As mentioned above these authors hope to lessen the rate of relapse by small maintenance doses at intervals of several weeks. From these figures, the conclusion is inescapable that gold therapy, as usually administered, exerts at best a transitory effect on the course of rheumatoid arthritis.

TABLE 1. *Results of General and Orthopedic Treatment in Rheumatoid Arthritis.*

STATUS OF DISEASE	NO. OF CASES		PERCENTAGE	
Improved:		145		52.9
In remission	45		16.4	
Moderately improved	33		12.0	
Slightly improved	67		24.5	
Stationary		79		28.8
Worse		50		18.3
Total		274		

Experience at the Massachusetts General Hospital with gold therapy in rheumatoid arthritis is limited to 47 patients, in all of whom the disease had been progressive or in a steady state for at least six months. Otherwise, they were unselected and represented a cross-section of the disease. There were 15 males and 32 females in the series, with ages ranging from eleven to sixty-eight years. The duration of the disease was under five years in about half the patients, but two years or under in only 5 and less than one year in none. The total severity of the disease was classified as follows: mild, 7; moderate, 31; and marked, 9. Most patients received Myochrysine, with a maximum weekly dosage of 100 mg. An attempt was made to give each patient at least two courses, each totaling 1 gm. of the drug. In 12, the treatment had to be stopped on account of toxicity before a full course had been given. The remaining 35 received a total of sixty-seven courses. Only a few of the patients receiving gold were hospitalized during treatment, but many of the others continued with extra rest, analgesics, a good diet and exercises, although general treatment was not stressed during this period.

The results of therapy are shown in Table 2, along with the rate of relapse following treatment, on the basis of the most recent follow-up study of patients showing improvement. In each case, any improvement recorded was objective and definite, so that the results may be compared with the control series in Table 1. Some improvement was observed in nearly the same proportion of patients treated with gold as in the controls, but none of the gold-treated patients entered on a remission. This difference might be expected from the fact that the patients receiving gold were selected for resistance to ordinary forms of treatment. From a study of the two tables, it is difficult to find evidence that gold therapy exerted any noteworthy effect on the course of the disease.

TABLE 2. *Results of Gold Therapy in Rheumatoid Arthritis.*

STATUS OF DISEASE	NO. OF CASES		PERCENTAGE	NO. OF RELAPSES	NET IMPROVEMENT	
					NO. OF CASES	PERCENTAGE
Improved:		21	60	13	8	23
In remission	0		0	0	0	0
Moderately improved	7		20	6	1	3
Slightly improved	14		40	7	7	20
Stationary or worse		14	40			
Total		35				

Sedimentation rates were determined at regular intervals in all cases. The results roughly paralleled the degree of clinical improvement, with normal values reached in all but 1 of the moderately improved patients, but an appreciable fall took place in only half of those showing slight improvement. The incidence of toxicity was high. In addition to the 12 in whom treatment had to be stopped during the first course, in 5 the dosage was inter-

rupted during the second or third course, and another 5 suffered from delayed manifestations of toxicity, sometimes months after the course had been finished. One patient developed a mild purpuric eruption after 0.9 gm. of Myochrysine, when treatment was stopped; over four months after the last injection, purpura reappeared in a generalized form, with bleeding from the gums and nose. Platelets were found to be absent from the blood smear. In spite of repeated transfusions, the patient continued to show evidence of widespread bleeding, and death took place in five weeks. At autopsy bilateral subdural hematomas were found to be the principal cause of death.

Conclusions

The first question that this report attempted to answer is whether gold therapy may be regarded as a specific and constantly effective treatment for rheumatoid arthritis. That the activity of the disease process is reversible is shown both by spontaneous remissions and by those encountered in pregnancy and intercurrent jaundice. From the small percentage of patients in the literature in whom the disease was arrested subsequent to gold treatment and from our own experience, the answer seems evident that gold cannot rightfully be included in the select group of specific agents available in medical therapy, such as the sulfonamides and penicillin in bacterial infections and the arsenicals and heavy metals in syphilis. Corroboration of this conclusion is furnished by the statements of a number of others who have had experience with gold therapy and who believe that this method should supplement general measures or constitute only a part of a broad therapeutic program.[35, 55–58]

It is more difficult to furnish a categorical answer to the question whether gold is of some benefit to the patient with rheumatoid arthritis and whether its use is therefore justified in a patient failing to respond to conservative measures. Two control studies apparently demonstrate an additive therapeutic effect on the part of gold during relatively brief periods of observation.[50, 53] Otherwise, the results obtained with gold may be approximated with those in patients given general, conservative treatment. A careful follow-up study of patients improving during gold therapy reveals a high percentage of relapses, so that the net gain is slight. There is even an indication that the natural, fluctuant course of the disease is largely responsible for the results reported in such cases. The burden of proof is still on the proponents of gold therapy to demonstrate by adequately controlled studies with a follow-up of three to five years that a significant effect is exerted on the course of rheumatoid arthritis by the administration of gold salts.

Finally, the unpredictable, unpreventable and at times irremediable toxic manifestations of gold therapy cannot be overlooked. If the specificity of gold were established, this risk would be justifiable in a disease that bears the implications of lasting invalidism. With the case as yet unproved for its place as a palliative or adjuvant remedy in rheumatoid arthritis, the hazard of this form of therapy should furnish the decisive argument against its general use.

References

1. Abrams, N. R., and Bauer, W. Treatment of rheumatoid arthritis with large doses of vitamin D: critical evaluation. *J. A. M. A.* **111**:1632-1639, 1938.
2. Freyberg, R. H., Block, W. D., and Fromer, M. F. Study of sulfur metabolism and effect of sulfur administration in chronic arthritis. *J. Clin. Investigation* **19**:423-435, 1940.
3. Sidel, N., and Abrams, M. I. Treatment of chronic arthritis: results of vaccine therapy with saline injections used as controls. *J. A. M. A.* **114**:1740-1742, 1940.
4. Hartfall, S. J., Garland H. G., and Goldie, W. Gold treatment of arthritis: review of 900 cases. *Lancet* **2**:784-788 and 838-842, 1937.
5. Copeman, W. S. C., and Tegner, W. Review of gold therapy. *Lancet* **1**:554-557, 1937.
6. Sundelin, F. Die Goldbehandlung der chronischen Arthritis unter besonderer Berücksichtigung der Komplikationen. *Acta med. Scandinav.* Supp. *117*: 1-291,1941.
7. Hench, P. S., et al. Problem of rheumatism and arthritis: review of American and English literature for 1939. *Ann. Int. Med.* **14**:1383-1448 and 1631-1701, 1941.
8. Cecil, R. L., Kammerer, W. H., and dePrume, F. J. Gold salts in treatment of rheumatoid arthritis: study of 245 cases. *Ann Int. Med.* **16**:811-827, 1942.
9. Rosenberg, E. F. Present status of gold therapy for rheumatoid arthritis. *Proc. Staff Meet., Mayo Clin.* **17**:264-271, 1942.
10. Slocumb, C. H., and Polley, H. F. Advances in study and treatment of rheumatoid arthritis as reported in 1942 and part of 1943. *M. Clin. North America* **28**:309-321, 1944.
11. Comroe, B. I. Use and abuse of gold therapy in rheumatoid arthritis. *J. A. M. A.* **128**:848-851, 1945.
12. Sabin, A. B., and Warren, J. Curative effect of certain gold compounds on experimental, proliferative, chronic arthritis in mice. *J. Bact.* **40**:823-856, 1940.
13. Landé, K. Die günstige Beeinflussung schleichender Dauerinfekte durch Solganal. *München. med. Wchnschr.* **74**:1132-1134, 1927.
14. Pick, E. Versuche einer Goldbehandlung des Rheumatismus. *Wien. klin. Wchnschr.* **40**:1175, 1927.
15. Forestier, J. L'aurothérapie dans les rhumatismes chroniques. *Bull. et mém. Soc. méd. d. hôp. de Paris* **53**:323-327, 1929.
16. *Idem.* Treatment of rheumatoid arthritis with gold salts injections. *Lancet* **1**:441-444, 1932.
17. *Idem.* Rheumatoid arthritis and its treatment by gold salts. *Lancet* **2**:646-648, 1934.
18. *Idem.* Rheumatoid arthritis and its treatment by gold salts: results of six years' experience. *J. Lab. & Clin. Med.* **20**:827-840, 1935.
19. Slot, G., et al. Treatment of arthritis and rheumatism with gold, with clinical notes. *Lancet* **1**:73-76, 1934.
20. Phillips, R. T. Treatment of arthritis with gold salts. *New Eng. J. Med.* **214**:114, 1936.
21. Oren, H. Arthritis and its treatment with gold salts. *J. M. Soc. New Jersey* **33**:591, 1936.
22. Bauer, W. Discussion of Cecil, R. L., Kammerer, W. H., and de Prume, F. J. Treatment of rheumatoid arthritis with gold salts. *Tr. A. Am. Phys.* **56**:339-348, 1941.
23. Editorial. Aurotherapy in rheumatoid arthritis. *J. A. M. A.* **117**: 368, 1941.
24. Conferences on Therapy. Treatment of rheumatoid arthritis. *New York State J. Med.* **41**:688-697, 1941.
25. Short, C. L. Gold therapy of rheumatoid arthritis. *Bull. New Eng. M. Center* **4**:31-34, 1942.
26. Traut, E. F., and Barton, E. M. Gold therapy of arthritis. *Illinois M. J.* **84**:263, 1943.
27. Beckman, H. *Treatment in General Practice.* Fifth edition. 1099 pp. Philadelphia: W. B. Saunders Company, 1946.
28. Hartung, E. F., and Cotter, J. Effect of gold sodium thiomalate administration on bacteriostatic properties of the serum in patients with rheumatoid arthritis. *J. Lab. & Clin. Med.* **26**:1274-1284, 1941.
29. Kling, D. H., Sashin, D., and Spanbock, J. Mechanism of gold therapy in rheumatoid arthritis. *J. Lab. & Clin. Med.* **24**:1241-1245, 1939.
30. Hench, P. S. Analgesic effect of hepatitis and jaundice in chronic arthritis, fibrositis and sciatic pain. *Ann. Int. Med.* **7**:1278-1294, 1934.
31. Bayles, T. B., and Riddell, C. B. Plasma lipids in patients with rheumatoid arthritis receiving gold salt therapy and during pregnancy. *Am. J. M. Sc.* **208**:343-350, 1944.
32. Tegner, W. Present trend of gold therapy for arthritis in Europe. *Proc. Staff Meet., Mayo Clin.* **14**:117-122, 1939.
33. Rawls, W. B., et al. Analysis of results obtained with small doses of gold in treatment of rheumatoid arthritis. *Am. J. M. Sc.* **207**: 528-533, 1944.
34. Freyberg, R. H., Block, W. D., and Levey, S. Metabolism, toxicity and manner of action of gold compounds used in treatment of arthritis: human plasma and synovial fluid concentration and urinary excretion of gold during and following treatment with gold sodium thiomalate, gold sodium thiosulfate and colloidal gold sulfide. *J. Clin. Investigation* **20**:401-412, 1941.
35. Freyberg, R. H., Block, W. D., and Wells, G. S. Gold therapy for rheumatoid arthritis: considerations based upon studies of metabolism of gold. *Clinics* **1**:537-570, 1942.
36. Snyder, R. G., and Traeger, C. Present status of gold salt therapy in Europe and America in treatment of chronic arthritis. *New York State J. Med.* **43**:245-251, 1943.

37. Snyder, R. G., Traeger, C. H., and Squires, W. H. Toxic reactions and death following gold therapy in chronic arthritis. *Indust. Med.* **11**:425-429, 1942.
38. Hartung, E. F. Treatment of rheumatoid arthritis including gold salts therapy. *Bull. New York Acad. Med.* **19**:693-703, 1943.
39. Ray, M. B. Note on treatment of chronic arthritis with calcium aurothiomalate. *Practitioner* **150**:49, 1943.
40. Thompson, H. E., and Wyatt, B. L. Gold therapy in chronic atrophic arthritis. *Southwestern Med.* **25**:207, 1941.
41. Hall, F. C. Treatment of chronic rheumatic conditions. *M. Clin. North America* **27**:1303-1338, 1943.
42. Ragan, C. A., and Tyson, T. L. Chrysotherapy in rheumatoid arthritis: 3-year follow-up of 142 patients treated with gold. Presented at meeting of the American Rheumatism Association, May 25, 1946, New York City.
43. Crosby, G. J. V. "Accidents" of gold treatment in rheumatoid arthritis. *Lancet* **1**:1463-1466, 1936.
44. Lintz, R. M. Toxic reactions with gold salts in treatment of rheumatoid arthritis. *J. Lab. & Clin. Med.* **26**:1629-1634, 1941.
45. Key, J. A., Rosenfeld, H., and Tjoflat, O. E. Gold therapy in proliferative (especially atrophic) arthritis. *J. Bone & Joint Surg.* **21**:339-345, 1939.
46. Council on Pharmacy and Chemistry. "BAL" (British Anti-Lewisite) in treatment of arsenic and mercury poisoning. *J. A. M. A.* **131**: 824, 1946.
47. Dawson, M. H., Boots, R. H., and Tyson, T. L. Gold salts in treatment of rheumatoid arthritis. *Tr. A. Am. Phys.* **56**:330-338, 1941.
48. Steinbrocker, O. Therapeutic results in rheumatoid arthritis. *J. A. M. A.* **131**:189-193, 1946.
49. Goldie, W. Effect of chrysotherapy on sedimentation rate in rheumatoid arthritis. *Ann. Rheumat. Dis.* **1**:319-332, 1939.
50. Fraser, T. N. Gold treatment in rheumatoid arthritis. *Ann. Rheumat. Dis.* **4**:71-75, 1945.
51. Sashin, D., Spanbock, J., and Kling, D. H. Gold therapy in rheumatoid arthritis. *J. Bone & Joint Surg.* **21**:723-734, 1939.
52. Snyder, R. G., Traeger, C., and Kelly, L. Gold therapy in arthritis: observations on 100 cases treated with gold sodium thiosulfate and aurocein. *Ann. Int. Med.* **12**:1672-1681, 1939.
53. Ellman, P., Lawrence, J. S., and Thorold, G. P. Gold therapy in rheumatoid arthritis. *Brit. M. J.* **2**:314-316, 1940.
54. Furlong, J. J. Treatment of rheumatoid arthritis with gold salts. *Wisconsin M. J.* **41**:910-914, 1942.
55. Thompson, H. E., Wyatt, B. L., and Hicks, R. A. Chronic atrophic arthritis. *Ann. Int. Med.* **11**:1792-1805, 1938.
56. Lansbury, J. Gold therapy in arthritis. *Pennsylvania M. J.* **47**:216-220, 1943.
57. Margolis, H. M., and Eisenstein, V. W. Some specific measures in treatment of rheumatoid arthritis. *J. A. M. A.* **114**:1429-1433, 1940.
58. Boots, R. H. Gold therapy in rheumatoid arthritis. *J. A. M. A.* **117**: 1560, 1941.

MASSACHUSETTS MEDICAL SOCIETY

PROCEEDINGS OF THE COUNCIL

Annual Meeting, May 21, 1946

THE annual meeting of the Council was called to order by the president, Dr. Reginald Fitz, Suffolk, on Tuesday, May 21, 1946, at 7:00 p.m., in the Georgian Room of the Hotel Statler, Boston.; 191 councilors (Appendix No. 1) were present.

In opening the meeting the President read the following obituary:

The President regrets to report the death of John Joseph Elliott, a councilor from the Norfolk District. He was in his fiftieth year.

Dr. Elliott received his degree from the Hahnemann Medical College in 1921. In Pottsville, Pennsylvania, where he spent his early days, he attained high distinction as an athlete, excelling in football, basketball, baseball and track. When he received his medical diploma he came to Boston and here he remained, after serving an internship and residency at the Massachusetts Memorial Hospitals. In 1923 he was appointed to the staff of that institution and was promoted in the course of twelve years from the rank of second assistant obstetrician to that of obstetrician.

Perhaps his flair for athletics enabled him to understand how the minds of young men react. In any event, he soon demonstrated outstanding ability as a teacher, became assistant in the Department of Obstetrics at Boston University in 1926, and was advanced through the grades of instructor and assistant professor until finally, in 1944, he was created associate professor.

He was a successful, hard-working physician, but in addition to leading a busy life as practitioner and teacher, he found time in which to cultivate hobbies in the field of sport. He was a recognized authority on the technical phases of basketball, track and baseball; he was consulting physician to the Boston College football team; he stimulated interest, locally, in pigeon racing; and he achieved national fame as horseman and owner of champion ponies.

He became a fellow of the Massachusetts Medical Society in 1926, serving on the Council during 1940, 1941 and 1942, and from 1945 until his death. He despised unfairness in any form; his judgment always was sound and unbiased, and thus he was a valuable member.

Besides being a fellow of the Massachusetts Medical Society and the American Medical Association, he belonged to the American College of Surgeons, the New England Obstetrical and Gynecological Association and the West Roxbury Medical Club.

Dr. Elliott is survived by his widow, two sons and a daughter.

The President asked the councilors to stand for one minute in silent tribute to the memory of Dr. Elliott.

In accordance with the vote of the Council in February, 1946, the President announced the following appointments:

Committee to Assist the Council on Medical Education and Hospitals of the American Medical Association in the Provisional Approval of Certain Massachusetts Hospitals:

Robert T. Monroe, Norfolk, *chairman*
H. Quimby Gallupe, Middlesex South
Walter G. Phippen, Essex South
Michael A. Tighe, Middlesex North
Charles F. Wilinsky, Suffolk

Committee to Review the Matter of Malpractice Insurance:

Carl Bearse, Norfolk, *chairman*
William J. Brickley, Suffolk
Edwin D. Gardner, Bristol South
Daniel B. Reardon, Norfolk South
Guy L. Richardson, Essex North

Committee on Postgraduate Assembly:

Leroy E. Parkins, Suffolk, *chairman*
Harold G. Giddings, Middlesex South
Frederick S. Hopkins, Hampden
Charles J. Kickham, Norfolk
Robert N. Nye, Suffolk

The President asked for confirmation of these appointments. It was so ordered by vote of the Council.

The Secretary submitted the record of the meeting of the Council held on February 6, 1946, as published in the May 2, 1946, issue of *The New England Journal of Medicine*, and moved its adoption. This motion was seconded, and it was so ordered by vote of the Council.

Report of the Treasurer

This report (Appendix No. 2) was offered by Dr. Eliot Hubbard, Jr., as published in the pamphlet of

advance information. He moved its adoption. This motion was seconded and it was so ordered by vote of the Council.

Reports of Committees

Executive Committee — Dr. Michael A. Tighe, Middlesex North, secretary.

The Secretary submitted the report (Appendix No. 3) as published in the circular of advance information and moved its acceptance. This motion was seconded by a councilor, and it was so ordered by vote of the Council.

Auditing Committee — Dr. William B. Robbins, Suffolk, chairman, and Dr. Arthur W. Carr, Plymouth.

This report, which was offered by the chairman, is as follows:

> The Auditing Committee appointed the firm of Hartshorn and Walter, accountants and auditors to audit the books and accounts of the Massachusetts Medical Society. This audit and account are hereby approved by us.
>
> The analysis of the revenues and expenses of the Society and the balance sheet of the condition of the funds of the Society have been inspected and approved by us.

Dr. Robbins moved the adoption of the report. This motion was seconded, and it was so ordered by vote of the Council.

Committee on Arrangements — Dr. Roy J. Heffernan, Norfolk, chairman.

This report, which is as follows, was offered by the chairman:

> The program of the annual meeting is our final report.
>
> You will be pleased to note that, in addition to the usual scientific program, the committee has revived some of the pleasant antebellum features, namely, the activities for the distaff side and the annual golf tournament.
>
> It should be emphasized that the commercial exhibits supply the wherewithal for our annual meeting. All members are urged to visit these exhibits frequently.
>
> I wish to thank the other members of the Committee on Arrangements for their loyal and efficient co-operation. Our chief worry during the past year was that something might happen to Mr. Robert Boyd before our plans were consummated. I cannot imagine how the committee could function without his gracious assistance. We are very grateful to him.

Dr. Heffernan, in offering the report, said that it contained one recommendation: that the fellows be urged to visit the commercial exhibits several times during the annual meeting.

He moved the adoption of the report and the recommendation contained in it. This motion was seconded by a councilor.

The President called on the Secretary for such comment as the Executive Committee might wish to make regarding this report. The Secretary said that the Executive Committee approved of the recommendation contained in the report and, in the furtherance of its objective, recommended additionally that the *New England Journal of Medicine* carry suitable references to these exhibits and that the several chairmen who preside over the exercises of the annual meeting be instructed to call, at least twice daily, the attention of the gathering to them and to the importance of paying them a visit.

These additional recommendations, having been accepted by the maker of the motion and its seconder, became part of the original motion. The motion was adopted by vote of the Council.

Committee on Medical Defense — Dr. Arthur W. Allen, Suffolk, chairman.

In the absence of the chairman the Secretary offered the report, which is as follows:

> We now have five malpractice suits pending. No new cases developed during the past year. Six cases were disposed of during the year.
>
> The total bills for legal services and disbursements for the year 1945 amounted to $571.67.

The Secretary moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the committee.

Committee on Medical Education — Dr. Robert T. Monroe, Norfolk, chairman.

This report (Appendix No. 4), as it appeared in the circular of advance information, was submitted by the chairman. He added that it was purely informational. He moved adoption of the report. This motion was seconded by a councilor.

The President called on the Secretary for such comment as the Executive Committee might wish to make regarding the report. The Secretary reported for the Executive Committee, as follows:

> This report is an excellent factual study of correlated material brought together from many sources. Its conclusions are soundly drawn. The Executive Committee is aware that the stimulus to the resolution offered by Dr. Mongan, by which the Council authorized this study, came about largely as the result of inquiry by members of the Massachusetts Legislature as to the need of additional medical schools in Massachusetts.
>
> Because this report now makes such information readily available, the Executive Committee in addition to recommending that the report be accepted by the Council, further recommends that the Council specifically direct the attention of the Committee on Legislation to the report, for such use as this latter committee may deem wise. In so directing the attention of the Committee on Legislation to this report, the Executive Committee points out that Table 4, as it relates to the rejections listed, without further explanation, might be subject to serious misunderstanding. In this connection the Executive Committee would have the Council and the Committee on Legislation know that most candidates apply simultaneously to many medical schools, and that those rejected by one school frequently find places in another. The committee has it on competent authority that a little over 50 per cent of all applicants ultimately find places in some medical school.

The maker of the motion and the seconder having accepted the recommendation of the Executive Committee, it became a part of the original motion, which was adopted by vote of the Council.

Committee on Publications — Dr. Richard M. Smith, Suffolk, chairman.

This report (Appendix No. 5) was submitted as published in the circular of advance information.

The chairman, in offering the report, called the Council's attention to the fact that we are now in the twenty-fifth year during which the *New England Journal of Medicine* has been operated by the Massachusetts Medical Society.

The report stated that Dr. John B. Youmans, formerly chief of the Nutrition Branch of the Office of the Surgeon General and associate professor of medicine at Nashville, Tennessee, had been selected to deliver the Shattuck Lecture during the annual meeting of the Society in 1946, that a directory of the fellows had been published during the year (1945) and that the accounts of the *Journal* had been audited and found to be in order.

The report, in calling attention to the excellent record of the *Journal* during the last year, spoke highly of the managing editor, Dr. Robert N. Nye, the assistant editor, Miss Davies, the associate editors and the members of the Editorial Board.

He quoted from the report of the managing editor to the effect that there was a substantial net increase in the circulation during the year 1945 and not only that the *Journal* had not used any of the monies appropriated by the Society for its use in 1945 but also that on December 31, 1945, it paid to the Treasurer of the Society the sum of $22,800.00. The report said that the pagination of the *Journal* had been increased and that the stock used was heavier, all of which was made possible by the removal of governmental limitations on paper.

The report said that the difficulties in the matter of printing were still present, and that the increased circulation and the shifting of addresses brought about by the war present a major problem. If the *Journal* is to function properly, additional office space must be provided.

Dr. Smith moved the adoption of the report. This motion was seconded, and it was so ordered by vote of the Council.

Committee on Public Health — Dr. Roy J. Ward, Worcester, chairman.

This report (Appendix No. 6) was offered by the chairman as published in the circular of advance information. He pointed out that it contained a recommendation that the President be authorized to take the initiative in aiding the four district societies concerned in selecting suitable representation on the Greater Boston Nursing Council. He moved the adoption of the report and the recommendation contained in it. This motion was seconded.

The President called on the Secretary for such comment as the Executive Committee might wish to make regarding this report. The Secretary reported for the Executive Committee, as follows:

> The Executive Committee notes that this report contains a recommendation to the effect that the president of the Society be authorized to take the initiative in aiding the four district societies concerned in selecting suitable representation on the Greater Boston Nursing Council. The Executive Committee disapproves of this recommendation. It believes that because of the Society's statewide character it should not associate itself with an organization that is purely sectional in its scope and purposes. The Executive Committee recommends in this connection that the Council reaffirm its stand in this matter as taken on October 6, 1937.
>
> The Executive Committee further recommends that the Council instruct the Secretary to write to Miss Tracy, of the Greater Boston Nursing Council, advising her of the Society's sympathetic interest in this matter and recommending that she make contact with the district societies concerned.

He moved, by way of amending the motion, the adoption of the recommendations of the Executive Committee. This motion was seconded.

Dr. Elmer S. Bagnall, Essex North, said that it was his impression that Miss Tracy had endeavored unsuccessfully to make contact with the district societies concerned. He expressed his belief that, in turning down the recommendation of the Committee on Public Health, the Council was sticking too closely to the proprieties of the situation. If Miss Tracy's request, he continued, were given serious thought by the district societies concerned, it would not be necessary for the Society to take action. Finally he expressed his opinion that the Society should not turn down a request to use its good offices in a matter that was of public interest.

Dr. Alexander J. A. Campbell, Suffolk, said that he spoke under instruction from the Suffolk District Medical Society, whose opinion was unanimous that the Massachusetts Medical Society has the responsibility of co-operating with the Massachusetts Nursing Council in its program to develop the best possible form of nursing organization in Massachusetts and that the Society should take whatever appropriate action might be deemed necessary, because the Massachusetts Nursing Council as such is not active and because its work is largely being carried on by the Greater Boston Nursing Council.

He moved as an amendment to the amendment that the President appoint a committee to confer with the chairman of the Greater Boston Nursing Council for the purpose of determining ways and means by which the common interests of these closely allied professions might be better developed.

Dr. Peirce H. Leavitt, Plymouth, spoke for the adoption of the recommendations of the Executive Committee.

The President elected first to put the recommendation offered by the Committee on Public Health. This was lost by vote of the Council. The President then put the recommendations offered by the Executive Committee. These recommendations were adopted by vote of the Council.

This matter having thus been disposed of, the recommendation offered by the representative from Suffolk was not put to a vote.

Committee on Society Headquarters — Dr. Frank R. Ober, Suffolk, chairman.

This report, which was offered by the chairman, is as follows:

The Committee on Society Headquarters still continues to give serious study to the possible expansion of the Society Headquarters.

It has, however, nothing definite to report in the matter at this time.

The chairman moved the acceptance of this report. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Physical Medicine — Dr. Arthur L. Watkins, Middlesex South, chairman.

This report, which is as follows, was submitted by the chairman:

As no new or special problems have been laid before this committee, its report is purely to inform the Society on developments in the field of physical medicine thought to be of interest. An outstanding event has been a more generally accepted recognition of the needs for expansion of knowledge in physical medicine and of more widespread utilization of measures already known to be effective in aiding recovery from disease and injury and occasionally in prevention and diagnosis. The gift of Bernard M. Baruch to foster research and teaching is noteworthy. At the Harvard Medical School a fellowship program was inaugurated one year ago to train promising men to become investigators and teachers. These fellowships extend over a three-year period including time for fundamental research. A three months' course which is offered at the Massachusetts Institute of Technology in biophysics aimed to instruct physicians in methods of instrumentation applicable to medical problems is another valuable Baruch project. It is expected that physical medicine will play an increasingly important role, particularly in problems of rehabilitation. All physicians are accordingly urged to acquaint themselves with the therapeutic possibilities of physical and occupational therapy. An annual progress report on research in physical medicine has been prepared for publication in the *New England Journal of Medicine* in order that the general practitioner may become familiar with the scientific background of physical medicine today.

The chairman moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the Council.

Committee on Public Relations — Dr. Albert A. Hornor, Suffolk, secretary.

This report, which is as follows, was submitted by Dr. Hornor:

The Secretary of the Committee on Public Relations has notified the secretaries of the district medical societies of the approval of the committee of the action taken by a group of physicians in Lowell, independent of the Massachusetts Medical Society, to educate their local public through advertising. Included in the letter were examples of the advertisements that had been put out in Lowell and in Newton and other groups. No action on this matter is requested.

The Committee on Public Relations has reviewed the report of the Special Committee Appointed to Confer with General Hawley anent the medical care of veterans in private hospitals and in the veterans' homes. The committee has likewise reviewed a schedule of fees intended to cover the charges for such medical care. The committee approved the report and the fee schedule.

The Committee on Public Relations approved the project of enrolling members of the Massachusetts Medical Society in the Blue Cross and recommends to the Council that this be effected in the manner considered most efficient by the secretary of the Massachusetts Medical Society and by the officials of Blue Cross.

The Committee on Public Relations is unwilling to take a stand on the question as to enrollment of the members of the Society in the Blue Shield. The question which is involved here is whether or not enrollment of members in the Blue Shield might or might not affect the tradition whereby one doctor supplied medical care to another or to the other's family without charge. The Committee on Public Relations has requested that Dr. Milton Quinn, chairman of the subcommittee that has investigated this question, present the problem to the Council.

In discussing this report, Dr. Hornor said it contained a recommendation that the Council approve of the enrollment of the members of the Massachusetts Medical Society in the Blue Cross in such a manner as is considered most efficient by the secretary of the Society and the officials of the Blue Cross. He moved the adoption of this recommendation. The motion was seconded, and it was so ordered by vote of the Council.

Dr. Hornor then stated that the matter of enrolling the members of the Society in the Blue Shield had been discussed by the committee, which offered no recommendation in this regard.

He called on Dr. Milton J. Quinn, Middlesex East, to present the argument for such enrollment. Dr. Quinn spoke as follows:

The members of the Committee on Public Relations declined to take definite action in the problem of the enrollment in the Blue Shield on the ground that it involved a very important principle in the practice of medicine, namely, the question of cash payment from one physician to another for services rendered.

Gratuitous care by one physician to another and his family has been a sacred principle of our profession throughout the centuries. It will continue thus in many quarters well into the foreseeable future. There are good reasons why strict adherence to this worthy principle has not always been practiced. A sort of a barter plan grew in popularity. A pair of tonsils is swapped for a beautiful Gladstone bag. A broken leg for a savings bond, which is approaching more closely a cash exchange and so on.

Some physicians and their families are so insured that in the event of accident or illness the attending physician is requested to send a bill for his services so that the insured may receive certain allowances. With communication and transport as they are today, it means overburdening more people in our profession with the care of doctors and their families. Some of the load is carried by all.

The interested committees of this Council have recently had under consideration a fee schedule applicable to war veterans and their dependents. This will include, I am sure, some doctors and their families. Shall we accept such fees? Shall we accept the fees offered by the Blue Shield? The problem now presented to the Council is whether or not it will approve the enrollment of the members of the Massachusetts Medical Society in the Blue Shield in a manner as suggested in the Blue Cross enrollment mentioned by Dr. Hornor.

At this point in the meeting, the President declared a short recess so as to afford those in the rear of the room to come forward, where ample seating space was available.

When the Council reconvened, the President asked the Secretary to state the views of the Executive Committee on this subject. The Secretary spoke as follows:

In the discussion attending this subject before the Executive Committee, Dr. Milton Quinn was heard. He expressed it as his belief that many members of the Society were overburdened by the care of other physicians and their families. He saw no reason why individual members of the Society might not join the Blue Shield, if they so desired. The question at issue, as he defined it, was whether or not the Massachusetts Medical Society should endorse their joining.

In connection with that subject, Section 2, Article II, of the "Principles of Medical Ethics" of the American Medical Association was read into the record. This section reads as follows:

> When a physician from a distance is called on to advise another physician or one of his family dependents, and the physician to whom the service is rendered is in easy financial circumstances, a compensation that will at least meet the traveling expenses of the visiting physician should be proferred. When such a service requires an absence from the accustomed field of professional work of the visitor that might reasonably be expected to entail a pecuniary loss, such loss should, in part at least, be provided for in the compensation offered.

It was pointed out that at least inferentially, except under the circumstances outlined, this section indicates that it is not considered good medical ethics for one physician to charge another for services rendered.

The Executive Committee likewise offers no recommendation regarding this matter.

The President stated that two committees had studied this matter and had apparently arrived at no conclusion.

Dr. Ralph R. Stratton, Middlesex East, chairman of the Committee on Ethics and Discipline, was recognized by the chair. Dr. Stratton spoke as follows:

> My feeling is strong that the article of the ethics of the American Medical Association in regard to this matter should stand. I believe that any man who is asked by a neighboring or fellow physician to take care of his family should feel complimented and be glad to attend that family for nothing, except that his expenses might be paid if the person receiving the service is in easy circumstances. I am heartily opposed to joining the Blue Shield in order that we might be paid for taking care of our own in their need.

Dr. Stratton's remarks were greeted with applause.

Dr. Charles J. E. Kickham, Norfolk, moved that the subject under discussion be laid on the table. This motion was seconded, and it was so ordered by vote of the Council.

Dr. Hornor moved that the report of the Committee on Public Relations, as a whole, excluding the part referring to enrollment in the Blue Shield, be adopted. This motion was seconded, and it was so ordered by vote of the Council.

By permission of the President, Dr. Daniel J. Ellison, Middlesex North, chairman of the Subcommittee Appointed to Confer with the Massachusetts Industrial Accident Board, offered the following supplement to the report of the Committee on Public Relations:

> Some months ago the Norfolk District Medical Society brought in a resolution which called for a review of the fees allowed by the Massachusetts Industrial Accident Board. The matter was referred to the subcommittee, consisting of Dr. David D. Scannell, Dr. Gordon M. Morrison and myself. The work of this subcommittee in this respect was finished yesterday morning.
>
> Henceforth a physician examining a workman who has developed a hernia as the result of his occupation is allowed a fee of $3.00 for an examination looking toward the establishment of this as a fact, when such a physician does not perform an operation. The surgeon operating on such an individual is allowed a fee of $75.00 for single and $100.00 for a double hernia. The operating surgeon is allowed no examination fee.
>
> House calls to individuals injured in industry will be allowed at the rate of $4.00 per call. Hospital calls under these same circumstances will be at the rate of $3.00 per call. Office calls will be at the rate of $2.50 per call.
>
> These represent substantial increases in the fees allowed for the medical care of industrial accident cases.
>
> We are very appreciative of the efforts of those groups concerned with these successful negotiations. Notable among those groups were the Massachusetts Industrial Accident Board, Mrs. Emma S. Tousant, chairman, the Medical Advisory Committee of the Industrial Accident Board, Dr. Cadis Phipps, chairman, and the subcommittee of the Committee on Public Relations.

Dr. Ellison moved the acceptance of the supplementary report. This motion was seconded, and it was so ordered by vote of the Council. (Dr. Ellison left the platform amid applause.)

Committee on Postwar Planning — Dr. Howard F. Root, Suffolk, chairman.

Dr. Root submitted the report (Appendix No. 7) as published in the circular of advance information.

It was stated that the Commonwealth, for purposes of postgraduate education, had been divided into seven districts, all of which had at least two sets of courses except District No. 1, in which courses were at the moment in preparation. In District No. 7, which includes the Greater Boston area, bi-weekly postgraduate programs were held from February 18 to May 15, 1946. Over a thousand physicians were registered for these courses. The average attendance at each exercise was over 500.

The report said that the Subcommittee on Veterans Affairs had been set up and a questionnaire distributed at the bi-weekly exercises mentioned above. The replies to this questionnaire indicated the need of office space, telephone listing and the enlargement of the activities of the Information Bureau at 8 Fenway.

The report decried the failure of the district societies to fill out completely the questionnaire sent out by the American Medical Association. This failure made it impossible for the Information Bureau to give advice regarding opportunities for practice in various parts of the Commonwealth.

Finally, the report mentioned a conference that was held with the Massachusetts Hospital Association concerning the provision of hospital appointments for veterans.

Supplementing the report, Dr. Root said that during the period of the annual meeting a questionnaire would be found at the registration desk, the purpose of which was to obtain information from the physicians in attendance, veterans and otherwise, regarding how the Committee on Postwar Planning might better serve the interests of the returning veteran doctor.

He moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the Council.

Committee on Legislation — Dr. David L. Belding, Norfolk South, chairman.

Dr. Belding submitted the report (Appendix No. 8) as published in the pamphlet of advance information. The report was debated in executive session.

Dr. Belding moved the adoption of the report and their recommendations contained in it. This motion was seconded.

The President called on the Secretary for such comment as the Executive Committee wished to make regarding this report. The Secretary stated that the Executive Committee, in approving of the report and the recommendations contained in it, applauded the wisdom that it displayed.

The motion was passed by vote of the Council. (Dr. Belding left the platform amid loud and prolonged applause.)

Massachusetts Delegates to the Council of the New England State Medical Societies

This report (Appendix No. 9) was offered by the Secretary as it appeared in the pamphlet of advance information. He moved its acceptance. This motion was seconded, and it was so ordered by vote of the Council.

The Secretary said that the Executive Committee recommended, subject to the approval of the Committee on Finance, that the Council appropriate the sum of $100.00 for the use of the New England Council during the ensuing year. In reference to this recommendation he stated that each medical society in the Council would appropriate a like amount. He moved the adoption of the recommendation. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Postwar Loan Fund — Dr. George Leonard Schadt, Hampden, chairman.

This report, which is as follows, was offered by the chairman:

> This report of the Committee on Postwar Loan Fund is informational only.
>
> This fund was activated by the Council, at its meeting in October, 1945, and since that date eleven loans have been made, each for five hundred dollars. In addition, there are three loans pending.
>
> Forty-four requests for information concerning the loan have been received by the committee.

Dr. Schadt moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the Council.

Report of the Massachusetts Representative to the House of Delegates of the American Medical Association.

This report (Appendix No. 10), as published in the pamphlet of advance information, was submitted by Dr. David D. Scannell, Norfolk. He moved its acceptance. This motion was seconded, and it was so ordered by vote of the Council.

Committee Appointed to Make Recommendations for Directors of the Blue Shield — Dr. Leland S. McKittrick, Suffolk, chairman.

In the absence of Dr. McKittrick, the Secretary submitted the following report:

> The Committee to Make Recommendations for Directors of the Blue Shield submits the names of the following men:
>
> To hold office until 1947:
>
> Mr. Philip Morgan — reappointment
> Dr. Norman A. Welch — reappointment
> Dr. Arthur W. Allen — reappointment
> Mr. J. H. Humphreys — reappointment
> Mr. Roswell Phelps — reappointment
>
> To hold office until 1948:
>
> Dr. Eugene Walker, superintendent, Springfield Hospital, Springfield, to replace Mr. Oliver G. Pratt (resigned).
> Mr. Thomas G. Brown — reappointment
> Dr. Elmer S. Bagnall — reappointment
> Mr. Ernest A. Johnson — reappointment
> Mr. Daniel J. Boyle — reappointment
>
> To hold office until 1949:
>
> Mr. Hugh Nawn, president, Hugh Nawn Incorporated, Boston, to replace Mr. Thomas Dignan (term expired).
> Mr. Joseph K. Milliken, Jr., superintendent, Mt. Hope Finishing Company, Dighton, to replace Mr. P. A. O'Connell (term expired).
> Dr. Samuel A. Robins — reappointment
> Dr. James C. McCann — reappointment
> Mr. Harold B. Leland — reappointment

The Secretary moved the acceptance of this report. This motion was seconded, and it was so ordered by vote of the Council.

Committee Appointed to Confer with the Massachusetts Hospital Association — Dr. Walter G. Phippen, Essex South, chairman.

The report, which is as follows, was presented by the chairman:

> This committee was instructed to consult with the Massachusetts Hospital Association as to activation of the Gallupe Plan to determine the position graduates of substandard schools might take on hospital staffs.
>
> In accordance with this vote the chairman wrote to the president of the Massachusetts Hospital Association and received the following reply which is self-explanatory:
>
> March 7, 1946
>
> Dr. Walter G. Phippen
> 31 Chestnut Street
> Salem, Massachusetts
>
> Dear Doctor Phippen:
>
> The recommendations of the Council of the Massachusetts Medical Society bearing on graduates of substandard schools, which you sent me recently, were presented to the trustees of the Massachusetts Hospital Association. On that same occasion Dr. Gallupe sat in with the trustees giving his endorsement to the recommendations and outlined his plan for making these recommendations effective in the Waltham Hospital.
>
> The trustees of the Massachusetts Hospital Association were entirely in sympathy with this movement to provide opportunities in hospitals for these graduates of substandard schools and agreed to cooperate in the movement.
>
> The manner of doing so is to be something like this:
>
> To inform the member hospitals of the Association by letter that the trustees of the Massachusetts Hospital Association believe it desirable that graduates of substandard schools be given opportunities in hospitals under suitable regulation.
>
> To advise the member hospitals that we endorse the recommendations of the Massachusetts Medical Society looking to this end.
>
> That we send each hospital of the Association a copy of these recommendations of the Council.
>
> I believe that the secretary of the Association is to be furnished with a supply of these printed recommendations, a copy of which you sent me and which I left with the secretary. These are to be included in a letter which goes to the membership.
>
> Having thus agreed with your committee and the Council of the Massachusetts Medical Society and moving in this way to give effect to the recommendations it seems to me it should about meet the needs of the present.

It may be desirable at some time in the near future to check up and see what is being done by the several hospitals of the Association and a meeting at that time may be profitable.

Should, however, you desire an earlier meeting I feel sure it can be arranged though it will be in the next administration for my term ends this month.

Sincerely yours,

(Signed) GEORGE A. MACIVER, M.D., *President*
Massachusetts Hospital Association

The committee will give further consideration as to what should be done to acquaint hospital staffs with the action of the Council.

In discussing this report, Dr. Phippen referred to the last sentence in the report proper. He said that, in furtherance of the promise contained in this sentence, the committee had sent a letter to the staffs of all the hospitals in the Commonwealth stating the following:

> The enclosed plan was adopted by the Council of the Massachusetts Medical Society on February 6, 1946, and was referred to the Committee to Meet with the Massachusetts Hospital Association. The trustees of the Massachusetts Hospital Association have unanimously agreed to co-operate, and its constituent members have been so informed. The committee therefore requests that you present this plan to your staff and urge its adoption.

Since that time, Dr. Phippen continued, the committee had received the following letter from the American College of Surgeons:

AMERICAN COLLEGE OF SURGEONS
40 East Erie Street
Chicago 11, Illinois

April 12, 1946

Dr. Walter G. Phippen, Chairman
Committee to Meet With the
Massachusetts Hospital Association
31 Chestnut Street
Salem, Massachusetts

My dear Doctor Phippen:

Acknowledgement is made of your letter of March 29 relative to the actions and recommendations of the Massachusetts Medical Society and the Massachusetts Hospital Association on graduates of nonapproved medical schools.

The acceptance of interns and residents who are graduates of nonapproved medical schools is the responsibility of the governing body of the hospital; in this the American College of Surgeons does not advise nor interfere. However, as the American Medical Association approves hospitals for the training of interns, it is advisable that this matter be taken up with that organization in order that there will be no misunderstanding in this respect.

The great trouble with graduates from nonapproved medical schools is the fact that they lack the fundamental education for the practice of medicine and in most instances take the minimum hospital training following graduation, and this usually in a hospital not approved for internships and residencies. We have found case after case in our surveys of hospitals where graduates of these schools, after one year internship in unrecognized hospitals, were attempting to do everything in surgery, obstetrics and highly specialized fields of medicine.

As to the appointment of graduates of nonapproved medical schools to the medical staff of the hospital, this is likewise the prerogative of the governing body of the hospital, in co-operation with the proper committee of the active medical staff. Neither the American College of Surgeons nor any other organization may usurp this authority. The American College of Surgeons through its hospital standardization program requires that the professional work of these physicians be under adequate supervision and control and that the privileges extended to them in the hospital be consistent with their qualifications, in order that the welfare of the individual patient will be assured. When these principles of hospital standardization are adequately heeded there is no hazard to the rating of the hospital from this aspect.

Trusting that the foregoing will be of value to you and assuring you of our continued interest and co-operation, I am

Very sincerely yours,

(Signed) MALCOLM T. MACEACHERN, M.D.
Associate Director

Dr. Phippen also read into the record the following letter, received from the Council on Medical Education and Hospitals of the American Medical Association:

AMERICAN MEDICAL ASSOCIATION
COUNCIL ON MEDICAL EDUCATION AND HOSPITALS
535 North Dearborn Street, Chicago 10

Office of the Secretary
April 24, 1946

Dr. Walter G. Phippen
31 Chestnut Street
Salem, Mass.

Dear Doctor Phippen:

At the request of Dr. Victor Johnson, secretary of the Council, I wish to acknowledge your letter of March 29.

The plan which you enclosed would seem to be a logical method of supervising work of registered physicians who do not yet hold hospital appointments. At the same time, it will enable the medical staff to determine the professional competence of individual physicians particularly in relation to subsequent staff appointments and assignment of hospital privileges in various fields of practice. The method which your committee has proposed is similar in many respects to the accompanying statement which has been forwarded to several hospitals in the New England area and also to the Massachusetts Medical Society.

Sincerely yours,

(Signed) F. H. ARESTAD, M.D.

* * *

The Council on Medical Education and Hospitals is interested in guarding against hospital staff appointments to physicians lacking in professional competence. In its standards, therefore, it has indicated that appointments should be limited to graduates of approved medical schools who have satisfactory qualifications as to training, licensure and ethical standing.

If the graduates of other medical schools wish to obtain the privilege of hospital appointment, their qualifications should likewise be evaluated on the basis of credentials, training and experience in medical practice. It would seem essential, therefore, that such applicants should have a sufficient period of service in the community to enable the medical staff to determine their professional competence. Their applications should then be considered on the basis of individual merit as in the case of other physicians. In this connection, it is necessary to keep in mind that the primary function of the hospital and its staff is to safeguard the care and welfare of the sick.

Dr. Phippen moved the adoption of the report. This motion was seconded.

The Secretary suggested that it might be well to send copies of the letters received from the American Medical Association and the American College of Surgeons to each hospital in Massachusetts because of the assurance given that the status of the hospital participating in the plan would not be unfavorably affected by such participation. This suggestion was referred by the President to the committee.

Dr. Schadt asked if graduates of unapproved schools who are members of the Massachusetts Medical Society are to be treated under this plan as graduates of the same type of school who are not members of the Society. He pointed out that the former group have already had a five-year probationary period.

Dr. Phippen stated that this was a question that must be answered by each hospital dealing with the individual doctor.

Dr. H. Quimby Gallupe, Middlesex South, said that he had promised to put this plan into operation in the Waltham Hospital. He continued as follows:

> We have in Waltham twelve physicians registered and practicing who are graduates of substandard schools, and the Executive Committee of the staff of the Waltham Hospital believed that it would be very difficult to differentiate one man from another, in other words that it would be almost impossible to pick out of that group men who were more fitted than others to work with the hospital on this plan. We had the plan adopted by the staff of the hospital and then accepted by the Trustees. The responsibility for the working of the plan was left in the hands of the staff.
>
> Through the Executive Committee we invited these twelve men to come to the hospital to a meeting, where the plan was explained to them; we had written copies of rules that would govern their activities in the hospital and we

talked very plainly. We told them that it was a matter of education, that we believed that they were not so well educated as they might have been, and they admitted it. I have never found one yet that did not regret that he had gone to a substandard medical school. They said that they were perfectly willing to do their share in improving themselves in the care of their patients. We started by inviting them to our staff meetings, which are purely educational, and to our clinical pathological conferences, which likewise are purely educational. They all came regularly, every one of them. Our staff attendance increased. It was better than we ever expected it would be. Enthusiasm about the staff meetings increased. The members of the active and consulting staffs were put on the spot clearly to show how good they were to these men who had not had so good an opportunity as they had had. I am sure that our hospital has increased its efficiency in the medical care of the citizens of Waltham and its educational value to all the physicians practicing in that community. I know of several lives that have already been saved because these men were able to get critically ill patients into a good hospital immediately. One of our rules was that every one of these men should make application for membership in the Massachusetts Medical Society at the earliest possible moment. Some of them are not eligible because they have not been licensed five years in this state, and those men of course are the ones who need help most. The men who have been practicing for five, ten or fifteen years perhaps do not need so much help as those who are just out of one of these inferior schools. We have taken them all in and have carefully supervised their work.

Give them all an equal chance and then, if you find that they are not satisfactory as members of your supervised courtesy staff — and that is what we call them — you can drop them; that is your privilege. But I do not believe that you will. The tendency will be to improve the teaching all the time, and they will improve all the time and the care of their patients will steadily improve, and as the result you will have a community receiving better hospital care. You will also have a community of effort in the raising of funds. You can imagine in Waltham, for instance, with twelve doctors not allowed to use the hospital and with perhaps ten or twelve thousand of the population, since they are the patients of these doctors, not being able to use our hospital, how disunited we became when attempting to raise funds for the hospital. This past fall, however, the Waltham Hospital attempted to raise $400,000 to increase the efficiency of the institution; we raised it immediately with a united public effort, and I am sure that it was at least in part due to the operation of this plan, which everybody in the community greets with great pleasure.

I was certain from the beginning that the American College of surgeons and the Council on Medical Education and Hospitals of the American Medical Association would not disagree with our plan. How could they? They could not disagree with something that was going to benefit the public. And that is the argument that we used in the Legislature in all the legislative bills this year. We have proved to the legislators that we are not after anything: we are simply out to give the people of this state the best possible medical care.

(Dr. Gallupe's remarks were greeted with applause.)

Dr. Nathaniel W. Faxon, Suffolk, in addressing the Council on this subject, spoke as follows:

This is in the nature of a testimonial to Dr. Gallupe's plan and Dr. Phippen's report, and partly in answer to Dr. Schadt's question.

Three years ago a young man from the South Shore who was a graduate of the Middlesex School applied for a residency at the Massachusetts General Hospital. He was investigated very carefully, and it was felt that he had the right stuff in him. He was given an appointment as a resident in anesthesia. He served for two years. He demonstrated his ability and his willingness to work hard and to learn. He is now a member of the paid anesthesia staff at the Massachusetts General Hospital, and we are very glad to have him. This is a direct successful application of the principle. I do not know whether he is a member of the Massachusetts Medical Society or not. I do not know whether he has been out of Middlesex long enough to be a member. But I do know that he has made good, and I have every confidence that he will continue to be a credit to the hospital and to the medical profession.

(Dr. Faxon's remarks were also applauded.)

The motion to accept the report was adopted by vote of the Council.

Committee to Confer With the Massachusetts Farm Bureau Federation — Dr. Joseph C. Merriam, Middlesex South, chairman.

This report, which is as follows, was presented by the chairman:

This committee was appointed on October 17, 1945. It communicated, forthwith, through the chairman, with the Massachusetts Farm Bureau Federation, and received an answer to the effect that there were no immediate problems of the Bureau regarding rural medicine, but that there undoubtedly would arise from time to time matters about which they would wish to confer. The Bureau was assured of this committee's interest and willingness to give them any service they could.

Several communications were received from the committee on Rural Medicine of the American Medical Association, from the American Farm Bureau Federation and from certain midwestern and southern state associations. This literature was carefully studied.

It is the opinion of this committee that whereas there is great need for improvement in rural medical facilities in certain areas of the country, Massachusetts does not present these problems to any great degree. The committee, however, feels that Massachusetts should support the national work and be ready to help its own state farm agencies when and if it is requested by them to do so.

Dr. Merriam moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the Council.

Representative of the Massachusetts Medical Society on the Massachusetts Committee for Nurses Procurement and Assignment Service — Dr. Dwight O'Hara, Middlesex South.

Dr. O'Hara reported as follows:

The Massachusetts Committee for Nurses Procurement and Assignment Service of the War Manpower Commission, was established by Congressional action in June of 1943. The Massachusetts Medical Society was represented in its deliberations from May, 1944, until it was dissolved on December 31, 1945. Up to September 1, 1945, the Service had classified 9812 nurses, most of whom were of military age. In all 4867 nurses were assigned from Massachusetts, 1146 of them being assigned between January 1 and August 1, 1945. The personnel of the state committee was as follows: Katharine E. Peirce, Mary E. G. Bliss and Hilga Nelson, chairmen; Mrs. Lloyd D. Brace, Dorothy J. Carter, Nathaniel W. Faxon, M.D. (representing the Massachusetts Hospital Association), Mrs. Bessie P. Hanson, Blanche A. Harriman, Katherine F. McCabe, Dwight O'Hara, M.D. (representing the Massachusetts Medical Society), Helen O. Potter and Eva S. Waldron. This committee handled a difficult assignment in a creditable manner, serving without compensation and in complete co-operation with all other wartime needs. It is a pleasure to report to the Council the effective work thus done by the nurses of the Commonwealth.

The President asked the Secretary for such comment as the Executive Committee wished to make regarding the report. The Secretary replied that the Executive Committee recommended that this representation be abolished.

Dr. O'Hara moved the acceptance of the report and the adoption of the recommendation of the Executive Committee. This motion was seconded, and it was so ordered by vote of the Council.

Representative to the Mental Health for Victory Organization — Dr. Abraham Myerson, Norfolk.

In the absence of Dr. Myerson, the Secretary read the following report, which had been submitted by Dr. Myerson:

> I think that the Council should be informed that the Mental Health for Victory Organization was "as idle as a painted ship upon a painted ocean." I went to one meeting. No other meetings were called, so far as I know, and nobody did anything at all about it. In fact, nothing could have been done.
>
> I am sorry that the report has to be as futile as it is, but that is the way things went, and I am giving you a candid report.

The Secretary moved the acceptance of the report. This motion was seconded.

The President asked the Secretary for such comment as the Executive Committee might wish to make regarding this report. The Secretary replied that the Executive Committee recommended that this representation be abolished.

The question, as put by the President, was that the report be accepted and the recommendation of the Executive Committee be adopted. It was so ordered by vote of the Council.

Representative to the Legislative Committee of the Massachusetts Central Health Council — Dr. William E. Browne, Suffolk.

The report, as submitted by the chairman, is as follows:

> Your representative has attended one meeting of the Legislative Committee of the Massachusetts Central Health Council during the past year. He believes that the Society should continue to have representation on this committee. The Massachusetts Central Health Council has great potentialities and deserves co-operation from the Society.

Dr. Browne moved the acceptance of the report. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Postgraduate Assembly — Dr. Leroy E. Parkins, Suffolk, chairman.

Dr. Parkins submitted the following report:

> A program subcommittee has been established to cover broadly the fields of medicine and surgery. An executive subcommittee has been established including representatives from the other New England states in order that the assembly may continue to be the New England Postgraduate Assembly rather than a local one. The committee anticipates that the assembly will be held in the fall and that choice of date and arrangements of the details of the program will soon be completed. This report is submitted for information and makes no recommendation.

Dr. Parkins supplemented this report by saying that the Assembly would be held on October 30 and 31, 1946, at a place not yet determined. He added that, during the course of the assembly, there would be a symposium on the care of the veteran throughout the English-speaking world.

Dr. Parkins moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the Council.

Representative to the Hospital Council of Boston — Dr. William E. Browne, Suffolk.

The following report was offered by Dr. Browne:

> Your representative has attended one meeting of the Hospital Council of Boston during the past year. At this meeting the general problem of professional charges to ward patients in hospitals was discussed. In certain hospitals no charges are made for the professional care of such patients, and in other hospitals, under certain conditions, a charge for such services is regarded as proper. The problem was presented whether any rule on this matter could be formulated. Your representative expressed the opinion that the establishment of any general rule should not be attempted; the problem varied so much in each hospital as to make it seem wise to leave the affair in the hands of the hospital and to encourage each hospital to establish such policies in the matter as best met its own needs.
>
> Your representative believes that the Society should continue to have representation on this Council. In this way can the viewpoint of the practicing physician — the most important component part of the Society — be kept before a group of individuals especially interested in broad hospital problems.

Dr. Browne moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the Council.

Representative to the Massachusetts Nursing Council for War Service — Dr. David D. Scannell, Norfolk.

The following report was offered by Dr. Scannell:

> During the past two years your representative has been notified of three meetings of the Council, which he attended. The Council now plans to change its name to the Greater Boston Nursing Council and to continue under a new constitution and by-laws. Since representation to the Massachusetts Nursing Council for War Service appears no longer necessary, your representative respectfully requests his discharge from this position.

Dr. Scannell moved the acceptance of the report. This motion was seconded.

The President called on the Secretary for such comment as the Executive Committee might wish to make regarding this report.

The Secretary replied that the Executive Committee recommended that this representation be abolished.

The question, as put by the President, was on the acceptance of the report and the adoption of the recommendation of the Executive Committee. It was so ordered by vote of the Council.

Committee of Seven Appointed to Nominate a Director of Medical Information and Education — Dr. Elmer S. Bagnall, Essex North, secretary.

The report, which is as follows, was offered by Dr. Bagnall.

> The Council of the Society voted on October 3, 1945, that a new position be created whose incumbent shall be known as the director of medical information and educa-

tion, and that he be appointed by the Council on proposal by a committee of seven to be named by the President.

The only specific duty, then, of this committee is to select and propose the name of a candidate for this position.

The committee felt that the selection of the right man required a definition of his duties far more precise than is given in the vote of the Council, to the end that his qualities and attainments should be adapted to these duties. They therefore communicated with all the state medical societies and the American Medical Association in order to learn of and profit by their experience, and also asked the officers of our district societies to suggest candidates from among their members. This is not the time to summarize and evaluate the many issues and problems thus brought to light. The committee feels that much of the work of the new director must at first be of an exploratory and tentative character and that its final emphasis and value cannot be predicted. Much will depend on the particular talents which he may bring to his office. It believes that ideally the incumbent should be a physician, a member of the Society, experienced in practice, and in early middle life, so that before him may stretch a long career of usefulness, which will steadily increase with his experience. Such a man must of course be on a full-time basis, and receive a salary sufficient to enable him to relinquish the income from a successful practice. His appointment should be terminated on his reaching a prescribed age, as in the case of academic or teaching appointments.

The committee has failed thus far to discover a suitable candidate with all these qualifications. They agree that the selection of the candidate is a matter of paramount importance and have preferred to proceed with caution rather than to run the risk through haste of committing a grave error. This report, therefore, is one of progress and contains no recommendation.

Dr. Bagnall moved the acceptance of the report. This motion was seconded, and it was so ordered by vote of the Council.

Other Committees

The President stated that no reports had been received from the standing committees on Ethics and Discipline and Industrial Health, or from the special committees on Council Rules, Maternal Welfare, Medical Advisory to Regional O.P.A. and Rehabilitation. Each of these committees had reported at least once during the last year, in accordance with Section 1, Chapter VII of the By-laws. No report had been received from the Committee on Expert Testimony during the preceding year, but this committee received special consideration at the Council meeting on February 6. The question was on the acceptance of a report of no report from each of these several committees.

A motion to this effect was made, seconded and carried.

Committee on Nominations — Dr. Ralph R. Stratton, Middlesex East, chairman.

Dr. Stratton reported as follows:

The Committee on Nominations of the Massachusetts Medical Society met on April 3, 1946, at 8 Fenway, Boston, and submitted the following list of officers for the year 1946-1947:

President: DWIGHT O'HARA, Middlesex South.
President-Elect: EDWARD P. BAGG, Hampden.
Vice-President: ISSAC S. F. DODD, Berkshire.
Secretary: MICHAEL A. TIGHE, Middlesex North.
Treasurer: ELIOT HUBBARD, JR., Middlesex South.
Assistant Treasurer: NORMAN A. WELCH, Norfolk.
Orator: LELAND S. MCKITTRICK, Suffolk.

The President asked for nominations from the floor. There were none. A motion was made to close all nominations. The motion was seconded, and it was so ordered by vote of the Council.

Dr. Stratton moved that the Secretary be instructed to cast one ballot for the list of officers as submitted by the Committee on Nominations. This motion was seconded, and it was so ordered by vote of the Council.

The Secretary stated that he had complied with this directive, and the President announced that the above mentioned officers were elected.

The President then introduced Dr. Dwight O'Hara, president of the Massachusetts Medical Society for the year 1946–1947, who addressed the Council as follows:

My professional life has been blessed with many opportunities and many honors. The opportunities I am sure I have not risen to, and the honors I am sure I have not deserved, but this is, I am also most sure, the greatest opportunity and the greatest honor that has been bestowed upon me, and I shall try to do all that I possibly can to be deserving of it. Thank you.

Dr. Stratton was appointed by the President to escort Dr. Edward P. Bagg, Hampden, president-elect, to the platform. On being introduced to the Council, Dr. Bagg spoke as follows:

Gentlemen, now you know what the trouble is with your nominating councilors. They have held office too long, and their judgment is uncertain. I will do the best I can, but I must say, if the rules become mixed up with poetic license, it is your fault, and not mine. I was not consulted, gentlemen.

At this point in the meeting the President spoke as follows:

Before calling on the President-Elect to fulfill his duty, the chair desires to make a final gesture. He wishes to remind the Council of an interesting bit of history.

The by-laws adopted in April, 1782, state that the Librarian shall have in his custody and charge all books belonging to the Society and shall cause each to be marked on the inside cover with the arms of the Society. On June 7, 1821, the Librarian was further directed to cause the name of the donor to be inserted in each volume.

The chair suggests that each incoming presiding officer of the Council should make his first official appearance with some appropriate ceremony. In this connection there are, he thinks, two insignia of the Society that should be passed in the presence of the Council from one presiding officer to the next.

The first comprises the annual proceedings of the Council for the previous ten years. Their careful study is required by all chairmen.

Each of these eleven volumes before you has been duly marked on the inside cover with the Society's bookplate prepared in 1782; and in accordance with the Council's wish of 1821, has the name of the donor inserted — the President who presided at the first meeting of the Council in that calendar year after his election.

The second is the chairman's copy of *Robert's Rules of Order*, also duly marked with the Society's bookplate. Without this well known guide, no chairman can hope to fulfill his specified duty of presiding at the meetings of even so considerate and tolerant a body as the Council.

Mr. Secretary, as retiring chairman of the Council, I now turn back to your hands the volume of the proceedings of the Council for 1935. Dr. O'Hara, these insignia are now yours to guard during the one hundred and sixty-sixth year of the Society's life.

Dr. O'Hara replied as follows:

I am sure that Dr. Fitz has gone as far as anyone could, farther than I would have believed anyone could have, to ease the way and smooth the path in the legislative manner with these relics which he now hands on to me. I only hope that I may be able to approach his pattern of diligence and behavior and preparation. Those of you who know how hard Dr. Fitz has worked know what a tremendous job he has done for the Society through a very difficult year. My endeavor will be to follow as nearly as I can. I know many reasons why I will not be able to keep up with his example, but as nearly as I can, I shall follow the pattern that he has placed before you.

The President-Elect submitted a list of nominations to committees for the year 1946-1947. It was moved and seconded that the nominations be confirmed. It was so ordered by vote of the Council. (The members of the standing and special committees for the year 1946–1947 will appear in the proceedings of the Society in the September 19 issue of the *Journal*.)

New Business

The following letter from the President was received by the Secretary:

April 3, 1946

Dr. Michael A. Tighe, Secretary
Massachusetts Medical Society
8 Fenway
Boston 15, Massachusetts

Dear Mr. Secretary:

Since the aims of both Blue Cross and Blue Shield have the support of the Society and since our employees are in no way protected by Social Security, may I suggest through you to the Executive Committee and the Council that henceforward the Massachusetts Medical Society adopt as a policy the payment of annual subscriptions to Blue Cross and Blue Shield for each person in our employment.

Yours sincerely,
(Signed) Reginald Fitz, M.D., *President*
Massachusetts Medical Society

The Secretary said that the Executive Committee had reviewed this communication and recommended that the Council authorize the enrollment mentioned. He moved the adoption of the recommendation. This motion was seconded, and it was so ordered by vote of the Council.

The Secretary read the following letter sent by the President to Dr. Francis C. Hall, chairman of the Committee on Finance, and the latter's answer:

April 3, 1946

Dr. Francis C. Hall, Chairman
Committee on Finance
372 Marlboro Street
Boston, Massachusetts

Dear Francis:

Because of the urgency of the situation, I am writing you at this late date requesting an extraordinary appropriation.

The clerical work of the Society is increasing by leaps and bounds. To meet such needs, which I believe are entirely proper, I hereby request an extraordinary appropriation of $3500 to be used for the employment of secretarial help.

Yours sincerely,
(Signed) Reginald Fitz, M.D., *President*
Massachusetts Medical Society

April 4, 1946

Dr. Reginald Fitz, President
Massachusetts Medical Society
8 Fenway
Boston, Massachusetts

Dear Reg:

I have your letter requesting an extraordinary appropriation of $3500 for the employment of secretarial help to be used under the direction of Dr. Tighe to take care of the increased activities of the Massachusetts Medical Society.

Of course, there has been no time to call a meeting of the committee and discuss this in detail, but I am not sure that the committee would feel differently if we did discuss it. I have talked with Dr. Wilinsky, Dr. O'Brien and Dr. Johnson, all members of the Committee on Finance. Dr. Bancroft Wheeler will be out of town until tomorrow so that I was unable to talk with him. Those of us who have discussed the matter believe that the President and Secretary know the needs of the Society and have the interests of the Society at heart.

We, therefore, feel that we have no choice but to express our confidence in them and endorse their request for this extraordinary appropriation. Therefore, the Committee on Finance hereby approves this appropriation, understanding that it will be submitted to the Executive Committee and Council for approval.

Cordially yours,
(Signed) Francis C. Hall, M.D., *Chairman*
Committee on Finance

The President called on the Secretary for such comment as the Executive Committee might wish to make regarding these communications.

The Secretary stated that the Society had but one full-time clerk, that the amount of clerical work in connection with the Society's business had increased by leaps and bounds and that the present setup was no longer adequate.

He emphasized the fact that two additional permanent clerks were needed. Reference was also made to the facts that in the past certain clerks in the employ of the *Journal* had been utilized on Society's business, that this had ceased to be a satisfactory arrangement, that reports were delayed beyond the time when they were most effective, and finally that much clerical work had to go for completion to outside secretarial offices, at great expense.

The Executive Committee recommended that the Council authorize this appropriation.

The Secretary moved the adoption of the recommendation. This motion was seconded, and it was so ordered by vote of the Council.

The Secretary, acting under the direction of the Executive Committee, made the following recommendation:

That the Council authorize the President to appoint a committee of five for the purpose of studying the question of raising the annual membership dues of the Massachusetts Medical Society and, in the event that such an increase is deemed necessary, for the further purpose of studying what part, if any, of the increase should be allocated to the Boston Medical Library.

The Secretary offered the following explanatory statement in support of the recommendation:

At a regular meeting of the Executive Committee held on January 9, 1946, a motion was made and seconded that the committee recommend to the Council that, beginning in January, 1947, the membership dues in the Massachusetts Medical Society be raised to $20.00 per year. This subject was debated at length at that time. The subject was finally laid on the table until the next regular meeting of the committee.

During the interval between the meeting of January 9 and the one held on April 24, the President addressed each member of the Executive Committee with a request that he ascertain the reaction of the members of his district toward this proposal.

Some districts conducted a postcard survey in this matter; in others the sentiment of their respective districts was checked by word of mouth in casual contact.

The members of the Executive Committee, while expressing themselves as believing that the mounting expenses of the Society made such a move necessary, did not believe that they were sufficiently informed as to the general sentiment of the Society to make a specific recommendation to the Council along these lines.

The treasurer of the Society, Dr. Eliot Hubbard, Jr., compared the expenditures of the Society during the last three years. He said that in 1944 they were $38,544; in 1945, $42,537; and that in 1946 the budget stood at $60,000.

He expressed it as his belief that at least an increase of $5 per year was necessary if the Society was to continue with plans already laid out. Dr. Hubbard also expressed it as his belief that, should an increase in dues be ordered, an increased allocation of funds should be made to the district societies.

Dr. Walter G. Phippen, president of the Boston Medical Library and a member of the Executive Committee from Essex South District Medical Society, expressed himself as in favor of the proposed increase, believing that of the $20.00 so collected, $5.00 should be allocated to the Library for the purpose of making it possible for this institution to serve the physicians of Massachusetts better. He said that, although the Library was most anxious to enlarge its scope of benefits, it found itself in such a financial position as to preclude this possibility.

The allocation of $5.00 per member would make it possible for the Library to serve what it regards as its real purpose.

Dr. Phippen, in speaking of the historical aspects of the Library, said that it was instituted in 1805. He said that it was the third largest medical library in the United States, with nearly 200,000 volumes and 135,000 pamphlets. The value of the Library contents he estimated as probably more than one million dollars.

He said it should be a modern research library, with modern conveniences for study. It should have a well-trained staff of sufficient size to give expert bibliographical aid to all members of the profession, to students and to research workers. This function it cannot perform because it has grown so fast that it has outgrown its financial means to do so.

Dr. Phippen said that the present income of the Library is about $30,000 per year and that an additional $30,000 is needed.

He pointed out that in a survey of the Library in 1941, Thomas F. Fleming, medical librarian of Columbia University, indicated that the future of the Library hinged on its development as a reference library not only for the benefit of Boston but also for that of the rest of Massachusetts and New England.

Dr. Phippen expressed the thought that if the books, which now more or less clutter up certain rooms, might be properly stacked, these rooms might become available for Society committee purposes.

The Secretary moved the adoption of the recommendation. This motion was seconded, and it was so ordered by vote of the Council.

The Secretary read the following letter addressed to the President:

AMERICAN ACADEMY OF PEDIATRICS
MASSACHUSETTS STUDY OF CHILD HEALTH SERVICES
319 Longwood Avenue, Boston
Telephone: BEAcon 3911

April 18, 1946

Dr. Reginald Fitz, President
Massachusetts Medical Society
8 The Fenway
Boston, Massachusetts

Dear Dr. Fitz:

Following up our conversation of last week, I should like to ask you or someone you might appoint to sit on the Advisory Committee of our study. It is planned that the committee will meet twice at the most and the first meeting will be on Wednesday, May 1, at the DuBarry Restaurant, 159 Newbury Street, at 12:30 p.m.

Sincerely yours,
(Signed) LENDON SNEDEKER
Executive Secretary

Under the rules, the President referred this communication to the Committee on Public Relations.

The Secretary read the following letter from Dr. George F. Lull, secretary of the American Medical Association.

April 9, 1946

TO THE SECRETARIES OF THE CONSTITUENT STATE MEDICAL ASSOCIATIONS

The Committee on National Emergency Medical Service of the American Medical Association, which was appointed in accordance with recommendations of the Board of Trustees adopted by the House of Delegates at its meeting held in December, 1945, has requested the Board of Trustees to give them permission to suggest that each constituent state medical association appoint a similar committee. This request has been approved by the Board. The recommendation adopted by the House of Delegates is as follows:

The Board of Trustees would recommend to the House of Delegates that it authorize the Board of Trustees of the American Medical Association to appoint a committee of seven to be known as the Committee on Military Service. This committee shall include four civilian physicians who served in the war and three others. The committee will study the many communications that have been received and the suggestions made by physicians in the armed forces. The committee will also formulate policies for recommendations to be forwarded through the Surgeons General to the Secretary of War and the Secretary of the Navy expressing the views of the medical profession in planning for proper utilization of the services of physicians in any national emergency.

The Chairman of the Committee, Dr. Edward L. Bortz, of Philadelphia, desires that as much publicity as possible be given the formation of these committees.

Very truly yours,
(Signed) GEORGE F. LULL

This letter was referred by the President to the Committee on Postwar Planning.

Dr. Charles J. Kickham, Norfolk, was recognized. He stated that, during one of the committee meetings of the Massachusetts Medical Society, the subject of revising upward the salaries of the Society's employees had been considered. He expressed his opinion that the rising cost of living had made such revision necessary in all walks of life. He discussed the various ways in which such a revision might be brought about.

Dr. Peirce H. Leavitt, Plymouth, expressed himself as believing that, if increases in salary were authorized, such increases should be made retroactive to a certain date.

The part that the Committee on Finance played in such a proposal was discussed.

Dr. Kickham finally moved that the President be authorized to appoint a special committee of three to confer with the Committee on Finance and subsequently to report the matter through the usual channels, with the idea of making any change in salaries retroactive to a certain date, if it so deemed wise. The motion was seconded, and it was so ordered by vote of the Council.

Dr. Bagnall was recognized. He spoke as follows:

It appears that the time may soon come when a change in income level of those eligible for the standard Blue Shield service contract may become necessary. It would seem prudent for the Society to be ready with factual data on this subject.

He moved that the President be authorized to appoint a special committee of five for this purpose. The motion was seconded, and it was so ordered by vote of the Council.

On a motion by a councilor, which was seconded by another, the Council voted to suspend the rules so as to provide Dr. Norman A. Welch with the opportunity of presenting to the Council an informational report on the Blue Shield.

Dr. Welch spoke as follows:

Before Dr. McCann left for California, he asked me as one of the directors of the Blue Shield, if I would present to you some information about this organization and I

promised that I would. So in spite of the fact that the time is late, I will keep my promise, but I shall be brief.

At present there are approximately 275,000 participants in the Blue Shield program, and this number is increasing at the rate of 20,000 a month. This compares with 220,000 at the beginning of the year.

The plan for the additional medical care in the hospitals has been completed and I believe has received the approval of the Insurance Commissioner, through whose office all these additions to the contract must go.

Considering the national pressure for very extensive coverage of the prepayment plans, the directors of the Blue Shield have approved the plan to increase the Blue Shield field, not only to add medical coverage in the hospitals, but also to add surgical coverage in outpatient departments, homes, and offices.

The actuary of the Blue Shield and the Blue Cross feels that there will be a slight increase in rates required to cover the surgical care in the home, office and outpatient department, and this will be accomplished by an increase in the rate from 85 cents to 95 cents for a single individual, from $1.65 to $1.90 for a married couple, and from $2.00 to $2.25 for a family.

Dr. McCann is, of course, very enthusiastic about the extension of coverage to include surgery in the home, office and outpatient department.

He also wanted me to mention to the Council, although I believe this has appeared in the Treasurer's report, that the Blue Shield has returned to the Massachusetts Medical Society the $25,000 which was advanced by the Society when this plan was formulated.

(Dr. Welch's statement was greeted with applause.)

There being no further business before the Council, the President declared the meeting adjourned at 10:15 p.m.

MICHAEL A. TIGHE, *Secretary*

APPENDIX NO. 1

ATTENDANCE OF COUNCILORS

BERKSHIRE

I. S. F. Dodd
Solomon Schwager
Helen M. Scoville
P. J. Sullivan

BRISTOL NORTH

W. H. Allen
J. H. Brewster
W. J. Morse
J. L. Murphy
W. M. Stobbs

BRISTOL SOUTH

G. W. Blood
R. B. Butler
H. E. Perry
C. C. Tripp
Henry Wardle

ESSEX NORTH

E. S. Bagnall
R. V. Baketel
Elizabeth Councilman
H. A. Fenton
E. H. Ganley
H. R. Kurth
P. J. Look
R. J. Neil
R. C. Norris
G. L. Richardson
F. W. Snow
C. F. Warren

ESSEX SOUTH

Bernard Appel
D. S. Clark
R. E. Foss
Loring Grimes
P. P. Johnson
A. E. Parkhurst
O. S. Pettingill
W. G. Phippen
E. D. Reynolds
H. D. Stebbins
P. E. Tivnan
C. F. Twomey

FRANKLIN

J. E. Moran

HAMPDEN

F. H. Allen
E. P. Bagg
E. C. Dubois
P. E. Gear
Frederic Hagler
G. D. Henderson
Charles Jurist
A. G. Rice
G. L. Schadt
J. A. Seaman

HAMPSHIRE

H. A. Tadgell

MIDDLESEX EAST

J. L. Anderson
Richard L. Dutton
R. W. Layton
M. J. Quinn
W. F. Regan
R. R. Stratton

MIDDLESEX NORTH

D. J. Ellison
A. R. Gardner
W. F. Ryan
M. A. Tighe

MIDDLESEX SOUTH

E. W. Barron
J. M. Baty
G. F. H. Bowers
Madelaine R. Brown
R. N. Brown
R. W. Buck
E. J. Butler
J. F. Casey
C. W. Clark
H. F. Day
C. L. Derick
J. G. Downing
H. Q. Gallupe
V. A. Getting
H. G. Giddings
H. W. Godfrey
J. L. Golden
A. D. Guthrie
Eliot Hubbard, Jr.
F. R. Jouett
A. A. Levi
A. N. Makechnie
J. C. Merriam
C. E. Mongan
J. P. Nelligan
E. J. O'Brien, Jr.
Dwight O'Hara
Fabyan Packard
L. G. Paul
S. H. Remick
Max Ritvo
E. H. Robbins
E. W. Small
H. P. Stevens
A. B. Toppan
C. F. Walcott
A. L. Watkins
Hovhannes Zovickian

NORFOLK

C. E. Allard
B. E. Barton
Carl Bearse
Arthur Berk
M. I. Berman
G. L. Doherty
Susannah Friedman
J. B. Hall
H. B. Harris
R. J. Heffernan
P. J. Jakmauh
I. R. Jankelson
C. J. Kickham
C. J. E. Kickham
D. S. Luce
C. M. Lydon
D. L. Lynch
F. P. McCarthy
H. L. McCarthy
R. T. Monroe
F. J. Moran
Hyman Morrison
D. J. Mullane
J. J. O'Connell
W. R. Ohler
G. W. Papen
S. A. Robins
D. D. Scannell
L. A. Sieracki
S. L. Skvirsky
Kathleyne S. Snow
J. W. Spellman
W. J. Walton
N. A. Welch

NORFOLK SOUTH

D. L. Belding
F. W. Crawford
Frederick Hinchliffe
E. K. Jenkins
N. R. Pillsbury
D. B. Reardon

PLYMOUTH

A. L. Duncombe
P. H. Leavitt
C. D. McCann
G. A. Moore
E. L. Perry
W. H. Pulsifer

SUFFOLK

W. J. Brickley
W. E. Browne
A. M. Butler
A. J. A. Campbell
N. W. Faxon
Reginald Fitz
Joseph Garland
R. L. Goodale
F. C. Hall
John Homans
A. A. Hornor
L. M. Hurxthal
C. S. Keefer
H. A. Kelly
R. I. Lee
W. J. Mixter
H. L. Musgrave
H. F. Newton
R. N. Nye
F. R. Ober
J. P. O'Hare
L. E. Parkins
Helen S. Pittman
J. H. Pratt
W. H. Robey
H. F. Root
R. M. Smith
M. C. Sosman
J. J. Todd
S. N. Vose
Conrad Wesselhoeft
C. F. Wilinsky

WORCESTER

C. R. Abbott
B. H. Alton
A. W. Atwood
George Ballantyne
F. P. Bousquet
W. J. Elliott
John Fallon
L. M. Felton
W. F. Lynch
R. S. Perkins
R. J. Ward
R. P. Watkins
B. C. Wheeler

WORCESTER NORTH

C. B. Gay
J. V. McHugh

APPENDIX NO. 2

Treasurer's Report

The year 1945, being the last of the war years, saw a further drop in income from dues to $40,825 from $41,215 in 1944. And through the canceling of the annual meeting the customary income from the Committee on Arrangements was not realized. However, a very pleasant increase occurred through the operations of the *New England Journal of Medicine* in the form of a return of $22,800, which is not to be added to General Fund principal but to be used as income for expenditures in 1946. The Society has a right to feel proud of the continued increase in circulation enjoyed by the *Journal* under Dr. Nye's management, maintained this year under rather unfavorable circumstances for production.

It is also pleasant to announce the repayment of the $25,000 loan made by the Society to the Massachusetts Medical Service in 1942. This repayment was as of December 31, 1945, and contributes toward the relatively large cash balance reported at the end of the year, as well as toward the reduced total value of securities held in the General Fund as compared with 1944. This sum will be invested early in 1946.

In 1945, $1312 was received for subscriptions to the *Journal* from members in service and was made over to the *Journal* as in 1944.

The income from the Building Fund securities has been added to the Building Fund principal in contrast to the procedure followed in 1944 but in line with the custom adhered to for many years previous.

The General Fund securities stand at a book value of $142,689 and market value of $149,353 as compared to $167,614 and $170,885 respectively for 1944.

The Building Fund securities for 1945 amount to $68,027 book value and $73,270 market value as compared to $68,170 and $70,858 respectively for 1944.

Endowment Fund securities have a book value of $23,166 which remains the same as in 1944.

Income from the General Fund was $4527 with a yield of 3.17 per cent as compared with $3969 in 1944. Income from the Building Fund was $2156 with a yield of 3.17 per cent as compared with $1960 in 1944.

Profit on securities sold, called or matured, in the General Fund was $991 and in the Building Fund was $173.

During the year there was no change in the portfolio of the Endowment Fund securities. Changes in the General and Building funds came mostly through bonds called or matured, to replace which one issue of convertible preferred stock was bought together with $44,500 United States Treasury 2½ per cent bonds maturing in 1972–1967, which already have a market value well above their purchase price. The Society now holds a total of $87,900 in government bonds throughout the different funds.

Total revenue for 1945 was $71,434 and total expenses were $42,538, leaving an excess of revenue over expenses of $28,896.

Total Building Fund assets amount to $70,537, an increase of $2330 over last year. General Fund assets amount to $211,199, an increase of $30,122 over last year. Endowment Fund assets remain at $23,166, causing the Society to end 1945 with a grand total of $304,903 assets in cash and securities, an increase of $32,452 over 1944.

The Treasurer would like to point out recent trends in the Society's activities that cause changes in the financial picture. From the point of view of revenue, the largest factor is the healthy growth of the *Journal* emerging from a stage not many years ago when the Society was called upon to advance money to help promote its efforts. From the viewpoint of expenditures certain committees are largely expanding the scope of their work in the interest of education of the profession and promotion of the health and protection of the community. Barring unforeseen and extreme fluctuations in these two factors, and in anticipation of increased income from dues as members return from the services, and from the re-establishment of the annual meeting, he believes that a balance can be maintained safely from year to year, on the present basis.

He would like again to acknowledge his great indebtedness to his secretary for her incomparable aid in the function of his office, and to express gratitude for the helpful assistance rendered by the entire staff of the *New England Journal of Medicine*.

A breakdown of comparative expenses for 1944 and 1945 is appended.

	1944	*1945*
Salaries:		
Secretary	$3,000.00	$3,000.00
Executive Secretary	3,000.00	4,000.00
Treasurer	2,000.00	2,000.00
Expenses:	*1944*	*1945*
President	714.36	608.77
Secretary	2,195.00	3,189.87
Treasurer	2,113.04	1,968.74
Delegates to A.M.A.	779.40	818.86
Maintenance of Society Headquarters	6,538.64	3,746.33
Shattuck Lecture	200.00	0
Cotting Luncheons	358.50	504.20
Committees:		
Arrangements	0	272.15
Ethics and Discipline	159.07	143.20
Executive	463.52	287.74
Finance	16.90	20.23
General Administrative	0	2,509.80
Industrial Health	97.61	92.87
Information Bureau	1,133.02	2,942.48
Legislation	204.80	3,580.02
Massachusetts Hospital Association	0	.08
Maternal Welfare	1.58	3.16
Medical Advisory to OPA	7.85	0
Medical Defense	1,113.03	571.67
Medical Education	.89	0
Membership	76.96	125.70
Military Postgraduate	411.06	607.63
Obstetrics and Gynecology	0	0
Postgraduate Instruction	4.60	0
Postwar Loan Fund	92.60	466.44
Postwar Planning	103.36	2,440.84
Postpayment Medical Care	44.90	8.66
Prepaid Medical Care	116.00	0
Public Health	24.28	82.36
Public Relations	164.06	1,295.05
Rehabilitation	0	44.10
Rules	0	4.51
Tax-Supported Medical Care	0	47.21
Wagner Bill Conference	56.03	0
War Participation	209.61	34.29
New England Medical Council	0	100.00
Publications:		
New England Journal of Medicine	7,900.00	0
Directories	51.36	1,709.00
Refunds to district societies	4,000.00	4,000.00
Refunds to fellows on active service	28.00	0
New England Journal of Medicine for subscriptions to *Journal* from Fellows in active service	1,164.00	1,312.00
Net loss on securities, sold, called or matured	0	0
	$38,544.33	$42,537.96

Eliot Hubbard, Jr., *Treasurer*

APPENDIX NO. 3

Report of the Executive Committee

The Executive Committee of the Council reviewed all the reports contained in the circular of advance information. It noted that they were to be a large extent informational. Beyond recommending their acceptance by the Council, the committee took no action. The committee also noted, however, that certain of these reports contained recommendations and it is with these that this report will deal specifically.

Committee on Arrangements

This committee recommends that all fellows be urged to visit the commercial exhibits during the course of the annual meeting. The Executive Committee, recognizing

the growing importance of these exhibits in the success of the annual meeting, approves of this recommendation and, in the furtherance of its objective, recommends additionally that the *New England Journal of Medicine* carry suitable reference to these exhibits and that the several chairmen who preside over the exercises of the annual meeting be instructed to call, at least twice daily, the attention of the gathering to them and to the importance of paying them a visit.

Committee on Medical Education

This report, in a special manner, elicited the commendation of the Executive Committee. It is an excellent factual study of correlated material brought together from many sources. Its conclusions are soundly drawn. The Executive Committee was aware that the stimulus to the resolution offered by Dr. Mongan, by which the Council authorized this study, largely came about as the result of inquiry by members of the Massachusetts Legislature regarding the need of additional medical schools in Massachusetts.

Because this report now makes such information readily available, the Executive Committee, in addition to recommending that this report be accepted by the Council, further recommends that the Council specifically direct the attention of the Committee on Legislation to it for such use as this latter committee may deem wise.

In so directing the attention of the Committee on Legislation to this report, the Executive Committee points out that Table 4 as it relates to the rejections, without explanation, might be subject to serious misunderstanding.

The Executive Committee would have the Council and the Committee on Legislation know that most candidates apply simultaneously to many medical schools and that those rejected by one school frequently find places in others. The Executive Committee has it on authority that a little over 50 per cent of all applicants find places in some medical school.

Committee on Public Health

The Executive Committee notes that this report contains the following recommendation: "That the president of the Society be authorized to take the initiative in aiding the four district societies concerned in selecting suitable representation on the Greater Boston Nursing Council."

The Executive Committee disapproves of this recommendation. It believes that, because of the Society's statewide character, it should not associate itself with an organization that is purely sectional in its scope and purpose.

The Executive Committee recommends that the Council reaffirm its stand in this matter as taken on October 6, 1937.

The Executive Committee further recommends that the Council instruct the Secretary to write to Miss Tracy, of the Greater Boston Nursing Council, advising her of the Society's sympathetic interest in this matter and recommending that she make contact with the district societies concerned.

Committee on Public Relations

The Executive Committee noted that this report contained one recommendation and a reference, without recommendation, to a correlated matter.

The recommendation would have the Council approve of the enrollment of the members of the Society in the Blue Cross in such a manner as is considered most efficient by the Secretary and the officials of the Blue Cross. The Executive Committee approves of this recommendation and recommends its adoption.

The Executive Committee noted that this report contained a reference to a similar enrollment of the members of the Massachusetts Medical Society in the Blue Shield. It also noted that the Committee on Public Relations was unwilling to take a stand on this matter because of the possible involvement of one of the Society's traditions whereby one physician cared for another or another's dependents without charge.

In the discussion attending this subject before the Executive Committee, Dr. Milton Quinn was heard. He believed that many members of the Society were overburdened by the care of other physicians and their families. He saw no reason why individual members of the Society might not join the Blue Shield if they so desired. The question at issue, as he defined it, was whether or not the Massachusetts Medical Society should endorse their joining.

In connection with the subject, Section 2, Article II, of the "Principles of Medical Ethics" of the American Medical Association was read into the record. This section reads as follows:

> When a physician from a distance is called on to advise another physician or one of his family dependents, and the physician to whom the service is rendered is in easy financial circumstances, a compensation that will at least meet the traveling expenses of the visiting physician should be proffered. When such a service requires an absence from the accustomed field of professional work of the visitor that might reasonably be expected to entail a pecuniary loss, such loss should, in part at least, be provided for in the compensation offered.

It was pointed out that at least inferentially, except under the circumstances outlined, this section indicates that it is not considered good medical ethics for one physician to charge another for services rendered.

The Executive Committee offers no recommendation regarding this matter.

Committee on Legislation

The Executive Committee believes that the Committee on Legislation acted with wisdom regarding the matters outlined in its report.

Massachusetts Delegates to the Council of the New England State Medical Societies

The Executive Committee directs the attention of the Council to a typographical error occurring in this report; "1946" should read "1945."

The Executive Committee recommends, subject to the approval of the Committee on Finance, that the sum of $100 be set aside to cover the expenses of the Council, a like amount being contributed by each of the state medical societies concerned.

Representative of the Massachusetts Medical Society on the Massachusetts Committee for Nurses Procurement and Assignment Service

The Executive Committee recommends that this representation be abolished.

Representative of the Massachusetts Medical Society to the Mental Health for Victory Organization

The Executive Committee recommends that this representation be abolished.

Representative to the Massachusetts Nursing Council for War Service

The Executive Committee recommends that this representation be abolished.

Nominations

The Executive Committee reviewed certain committee nominations made by the President-Elect for the year 1946-1947 and recommends their approval by the Council.

Communications

The Executive Committee reviewed a communication concerning an enrollment of the employees of the Society in the Blue Cross and Blue Shield. The communication was received by the Secretary and signed by the President. The Executive Committee recommends that the Council authorize this enrollment.

The Executive Committee reviewed a communication addressed to Dr. Francis C. Hall, chairman of the Committee on Finance and signed by the President, and Dr. Hall's answer. In this communication, the President requests an extraordinary appropriation of $3500 to be used for additional secretarial help in the Society's offices. In supporting this appropriation, the President pointed out that the Society has but one full-time clerk, that the amount of clerical work in connection with the Society's business has increased by leaps and bounds and that the present setup is no longer adequate to meet our needs. It was emphasized that two additional permanent clerks are needed at the present time. Reference was made to the

fact that in the past certain clerks in the employ of the *Journal* have been utilized on Society's business, that this has ceased to be a satisfactory arrangement, that reports are delayed beyond the time when they are most effective and finally that much clerical work has to go for completion to outside secretarial offices involving considerable expense. The Executive Committee recommends that the Council authorize this appropriation.

Dues

At a regular meeting of the Executive Committee held on January 9, 1946, a motion was made and seconded that the committee recommend to the Council that, beginning in January, 1947, the membership dues in the Massachusetts Medical Society be raised to $20.00 per year. This subject was debated at length at that time. The subject was finally laid on the table until the next regular meeting of the committee.

During the interval between the meeting of January 9 and the one held on April 24, the President addressed each member of the Executive Committee with a request that he ascertain the reaction of the members of his district toward this proposal.

Some districts conducted a postcard survey in this matter; in others the sentiment of their respective districts was checked by word of mouth in casual contact.

The members of the Executive Committee, while expressing themselves as believing that the mounting expenses of the Society made such a move necessary, did not believe that they were sufficiently informed as to the general sentiment of the Society to make a specific recommendation to the Council along these lines.

The treasurer of the Society, Dr. Eliot Hubbard, Jr., compared the expenditures of the Society during the last three years. He said that in 1944 they were $38,544; in 1945, $42,537, and that in 1946 the budget stood at $60,000.

He expressed it as his belief that at least an increase of $5.00 per year was necessary if the Society was to continue with plans already laid out. Dr. Hubbard also expressed it as his belief that, should an increase in dues be ordered, an increased allocation of funds should be made to the district societies.

Dr. Walter G. Phippen, president of the Boston Medical Library and the member of the Executive Committee from Essex South District Medical Society, expressed himself in favor of the proposed increase, believing that of the $20.00 so collected, $5.00 should be allocated to the Library for the purpose of making it possible for this institution to serve the physicians of Massachusetts better. He said that, while the Library was most anxious to enlarge its scope of benefits, it found itself in such a financial position as to preclude this as a possibility.

The allocation of $5.00 per member would make it possible for the Library to serve what it regards as its real purpose.

Dr. Phippen, in speaking of the historical aspects of the Library, said that it was instituted in 1805. He said that it was the third largest medical library in the United States with nearly 200,000 volumes and 135,000 pamphlets. The value of the Library contents he estimated as probably more than one million dollars.

He said it should be a modern research library with the modern conveniences for study. It should have a well-trained staff of sufficient size to give expert bibliographic aid to all members of the profession, students and research workers. This function it cannot perform because it has grown so fast that it has outgrown its financial means to do so.

Dr. Phippen said that the present income of the Library is about $30,000 per year and that an additional $30,000 is needed.

He pointed out that in a survey of the Library in 1941, Thomas F. Fleming, medical librarian of Columbia University, indicated that the future of the Library hinged on its development as a reference library not only for the benefit of Boston but also for that of the rest of Massachusetts and New England.

Dr. Phippen expressed the thought that if the books, which now more or less clutter up certain rooms, might be properly stacked, these rooms might become available for Society committee purposes.

The Executive Committee, under the head of new business, will recommend that the Council authorize the President to appoint a committee of five for the purpose of studying the question of raising the annual membership dues of the Massachusetts Medical Society and, in the event that such an increase is deemed necessary, for the further purpose of studying what part, if any, of the increase should be allocated to the Boston Medical Library.

MICHAEL A. TIGHE, *Secretary*

APPENDIX NO. 4

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION

On October 17, 1945, the Council referred to this committee the following resolution, offered by Dr. Charles E. Mongan:

WHEREAS, The question has been repeatedly asked in public and private concerning the facilities for medical education in Massachusetts, and
WHEREAS, No satisfactory scientific answer has been forthcoming, therefore, be it
RESOLVED, That the Massachusetts Medical Society undertake a survey of medical educational facilities at present available in New England.

The committee has held several meetings, has consulted with the deans of several medical schools, the head of the state departments of health, other educational officials here and in the American Medical Association, and now begs to submit the following informational report.

There are five medical schools in the six New England states approved by the Approving Authority of the Commonwealth of Massachusetts. They are as follows:

	Registration Over
Yale University School of Medicine, New Haven, Conn.	200
Boston University School of Medicine, Boston, Mass.	210
Harvard Medical School, Boston, Mass.	530
Tufts College Medical School, Boston, Mass.	410
University of Vermont College of Medicine, Burlington, Vt.	125
Total Registration	1475

It seems unnecessary to describe the educational facilities of these schools as to buildings, hospital affiliations, endowment, annual budgets, faculties and so forth. This information for the most part is available in the printed catalogues of the schools, which can be had on request to their deans. Their facilities are sufficient to warrant the continued approval and support of their parent university.

Medical education is expensive. The tuition fees, usually ranging from $400 to $600 per student per academic year, cover only a fraction of the actual cost; the rest is borne by endowments, grants from the parent organization, philanthropic and charitable foundations, or by federal, state and community funds. For comparison with the cost of other educational processes, note the following table taken from the "Educational Number" of the *Journal of the American Medical Association* for January 13, 1940:

School	Cost per Student Credit Hour
Education	$4.06
Commerce	5.92
Engineering	10.52
Law	11.05
Agriculture	14.51
Dentistry	15.87
Medicine	26.96

It is reasonable to assume that these figures would be greater today.

The high cost to the student can be offset to some degree by scholarships and grants and by part-time extracurricular employment, an expedient which is undesirable in that it takes energy from the main task of studying medicine.

Are these five schools able to create enough doctors to meet the medical needs of New England adequately? This is hard to answer, for what is *adequate?* Of course, New England should not be considered as a unit independent of the rest of the country, for there is a free inter-

change of students. And the question should be separated as much as possible from issues such as distribution of physicians and volume of student applications.

It would seem reasonable to assume that if the proportion of physicians in the population over a fair number of years remains stable, that proportion is probably acceptable ("adequate") in terms of public need. If it rises, increased need would appear to have been felt and met; if it falls, the saturation point must have been reached.

On this assumption, the sample figures in Table 1 were assembled from the *American Medical Directory*, the *Year Book of Facts* and the reports of the United States Census. It is seen that, over a period of twenty-four years, the population of the United States increased over 26,000,000 the number of physicians increased over 41,500, but that

TABLE 1. *Proportion of Physicians in the Population of the United States and New England.*

		POPULATION (APPROX.)	NO. OF PHYSICIANS	PHYSICIANS PER 1000 POPULATION
1918	United States	105,000,000	147,812	1.408
	Massachusetts (1916)	3,662,339	5869	1.607
	(Boston)	729,600	2018	2.770
	(Springfield)	103,200	201	1.929
	Connecticut (1916)	1,223,583	1678	1.371
	(New Haven)	147,000	266	1.811
	(Hartford)	108,900	256	2.331
	New Hampshire (1916)	440,584	690	1.567
	(Concord)	22,400	44	1.964
	Maine (1916)	767,638	1205	1.569
	(Portland)	63,014	165	2.624
	Rhode Island	602,765	772	1.282
	(Providence)	250,000	432	1.727
	Vermont	362,452	668	1.845
	New England	7,059,361	10,882	1.541
1921	United States	106,418,284	145,608	1.370
	Massachusetts	3,852,356	5959	1.548
	(Boston)	747,900	2095	2.800
	Connecticut	1,380,000	1729	1.253
	(New Haven)	162,300	318	1.960
	New Hampshire	443,000	641	1.447
	Maine	768,014	1105	1.438
	Rhode Island	604,397	778	1.287
	Vermont	352,400	594	1.686
	New England	7,400,000	10,806	1.462
1931	United States	122,775,046	156,440	1.275
	Massachusetts	4,249,600	6595	1.552
	(Boston)	781,100	2549	3.268
	(Springfield)	149,900	262	1.748
	Connecticut	1,606,900	2165	1.349
	(New Haven)	162,600	438	2.695
	New Hampshire	465,200	567	1.209
	Maine	797,400	989	1.240
	(Portland)	70,800	167	2.364
	Rhode Island	687,400	844	1.228
	(Providence)	252,900	527	2.083
	Vermont	359,800	489	1.360
	New England	8,166,300	11,649	1.426
1936	United States	126,425,000	165,163	1.307
	Massachusetts	4,335,000	7263	1.675
	(Boston)	781,100	2770	3.546
	(Springfield)	149,900	295	1.968
	Connecticut	1,655,000	2401	1.470
	(New Haven)	162,600	486	2.994
	New Hampshire	470,000	593	1.262
	Maine	804,000	966	1.201
	(Portland)	70,800	161	2.272
	Rhode Island	705,000	924	1.310
1941	(Providence)	252,900	566	2.247
	Vermont	361,000	503	1.394
	New England	8,330,000	12,650	1.519
1942	United States	131,669,000	189,496	1.443
	Massachusetts	4,316,000	8085	1.876
	(Boston)	770,800	2934	3.717
	(Springfield)	149,500	296	1.980
	Connecticut	1,709,000	2720	1.602
	(New Haven)	160,600	528	3.289
	New Hampshire	491,500	687	1.398
	Maine	847,200	1011	1.194
	(Portland)	73,600	166	2.252
	Rhode Island	713,300	958	1.344
	Vermont	359,200	551	1.536
	New England	8,436,200	13,012	1.543

the number of physicians for each thousand persons changed very little, — from 1.408 in 1918 to 1.443 in 1942. Expansion of medical educational facilities has kept even pace with increase in population. Therefore, it would appear that this proportion of physicians is about what the public asks for, at least at its present level of appreciation of need.

New England has a higher ratio of physicians to population than the rest of the country in every sampled year. In 1918, it had 1.541 physicians per thousand population; in 1921, it had 1.462; in 1931, it had 1.426; in 1936, it had 1.519; and in 1942, it had 1.543. Massachusetts persistently has had a higher ratio of physicians to population than any other New England state except for Vermont in 1918. Their uneven distribution between towns and cities, however, is plain — in Boston greatest of all, perhaps because it is the chief center of medical education for the area.

Another fact that emerges from Table 1 is that the states which have medical schools maintain a higher proportion of physicians than those which do not. This has been true of Massachusetts and Vermont for many years. Connecticut had a low physician ratio in 1918 and 1921 but attracted more doctors than population thereafter. On the other hand, Rhode Island has been low in physicians in ratio to population in four of the five sampled years and equaled the national average only once; and Maine has been low every year.

Finally, Table 1 suggests that there is no present need for the establishment of a new medical school in Massachusetts, or even in New England. Harvard and Yale being national schools, take large numbers of students from beyond New England; but Tufts, Boston University and Vermont give distinct preference to in-state and New England residents.

As the population of New England increases, more physicians must be trained. At some time in the future, therefore, the question must be faced whether it will be better to expand the existing educational plants or to arrange for the development of one or more new schools. Various considerations will have to be weighed carefully, such as the financial expense, the ideal size of a medical school, the existent clinical facilities, and the needs of the community. The conclusions of the Council on Medical Education and Hospitals as published in the *Journal of the American Medical Association* for September 1, 1945, show much common sense. A few are quoted:

> Any overall increased present or postwar need for additional physicians occasioned by the war can be provided by existing approved schools. There is no justification for establishing new medical schools for this purpose. Furthermore, the normal annual number of graduates from existing schools is adequate for the peacetime needs of the country, granted distribution is equal.
>
> The maldistribution of physicians as between the states or between urban centers and rural areas is a problem to be attacked primarily by other means than the production of more doctors in a given state; the rate of production and the distribution of doctors in this country are independent.
>
> Medical education is by far the most expensive form of professional training, requiring an initial outlay and subsequent annual budgets in the early years totaling millions of dollars and not tens or hundreds of thousands. A school whose resources include annual budgets of less than $350,000, independent of the cost of maintenance of the hospital and out-patient departments, is unlikely to conduct a satisfactory program.

The medical educational facilities in New England and all over the country are inadequate in the opinion of the college student, for there are only about half as many places in schools as there are applicants for them. Dr. Fred C. Zappfe's annual reports in the *Bulletin of the Association of American Medical Colleges* show, for the years 1933-1942, applicants varying from 11,800 to 14,043, with 50 per cent acceptances. Many candidates seek to assure themselves of a place by applying to several schools at once. The figures of recent years for our territory are shown in Table 2. The volume of applications does not show a significant upward trend, though there is a suggestion that it decreases in good business years and increases in bad years.

Table 3 shows that New England takes care of the same proportion of its students wishing to enter medicine as does the rest of the country. Massachusetts and Vermont do distinctly better than that. Connecticut students go in greatest number to nearby New York. Students from our two states without medical schools show a slight preference for schools outside of New England.

Table 4 shows the rejection rates for applicants to the medical schools in this area in a recent six-year period. The total number of candidates varies greatly; the number accepted (one fifth to one half) remains constant for a given school according to its capacity; and a few less are finally enrolled.

It would be unwise to create enough medical schools to take care of all who now apply to enter them. The law of supply and demand seems to have settled on a proper ratio of physicians to population in this country, as shown in Table 1. To increase this to any large extent would be costly and not in the interests of the public welfare. We do not need more doctors; we need *better* doctors, rather than a flood of mass-produced and hence inferior doctors. We must conclude on such evidence that New England does not now need a new medical school, and that its present schools can meet the medical needs of the anticipated growth in population in this area for the next several years. Were any new school to be developed, we believe that it could be placed more advantageously and usefully in Maine or Connecticut than in Vermont, Rhode Island or Massachusetts.

ROBERT T. MONROE, *Chairman*

TABLE 2. *Number of Applicants to Medical Schools in New England in the Years 1935–1942.**

		Single Application	Multiple Application	Total Applicants
Massachusetts ...	1935	180	335	515
	1936	161	303	464
	1937	137	329	466
	1938	144	276	420
	1939	108	263	371
	1940	151	272	423
	1941	157	245	402
	1942	189	248	437
Connecticut	1935	58	114	172
	1936	64	113	177
	1937	59	113	172
	1938	75	113	188
	1939	44	128	172
	1940	51	105	156
	1941	57	98	155
	1942	48	152	200
Rhode Island	1935	20	56	76
	1936	8	50	58
	1937	19	47	66
	1938	20	46	66
	1939	16	54	70
	1940	17	39	56
	1941	13	35	48
	1942	14	32	46
Maine	1935	29	36	65
	1936	19	39	58
	1937	10	33	43
	1938	21	21	42
	1939	13	33	46
	1940	12	25	37
	1941	13	23	36
	1942	14	27	41
New Hampshire	1935	26	31	57
	1936	17	21	38
	1937	18	19	37
	1938	21	13	34
	1939	21	19	40
	1940	20	21	41
	1941	20	29	49
	1942	14	23	39
Vermont	1935	51	7	58
	1936	60	8	68
	1937	44	10	54
	1938	47	10	57
	1939	31	10	41
	1940	44	16	60
	1941	29	12	41
	1942	30	7	37

*Figures obtained from the "Educational Numbers" of the *Journal of the American Medical Association.*

TABLE 3. *Proportion of Medical Students Who Are Educated in Their Native State or in New England for the Years 1937–1944.**

	Students in Native State	Students in Other N. E. States	Total Students	Percentage N. E. Students in N. E. Schools
United States	112,412	....	193,186	56
Connecticut	360	454	2088	35 (native state)
Massachusetts	4145	347	6963	64
New Hampshire ..	44	264	746	41
Vermont	688	62	892	84
Maine	....	377	838	45
Rhode Island	....	414	898	46
New England	5237	1918	12,425	57

*Figures obtained from the "Educational Numbers" of the *Journal o the American Medical Association.*

TABLE 4. *Fate of Applicants to the Six New England Medical Schools in the Years 1938-1942.**

		Applicants Accepted	Applicants Rejected	Total Applicants	Enrolled
Yale	1938	91	454	545	55
	1939	77	427	504	54
	1940	71	418	489	—
	1941	64	417	481	50
	1942	66	540	606	58
Harvard	1938	152	696	848	124
	1939	151	668	819	128
	1940	146	579	725	—
	1941	144	581	725	117
	1942	147	703	850	147
Tufts	1938	133	255	388	100
	1939	138	270	408	104
	1940	132	251	383	—
	1941	141	198	339	111
	1942	146	316	462	111
B. U.	1938	96	294	390	57
	1939	102	319	421	64
	1940	89	336	425	—
	1941	109	266	375	69
	1942	128	420	548	63
Dartmouth	1938	22	135	157	22
	1939	20	104	124	20
	1940	23	162	185	—
	1941	23	122	145	22
	1942	29	62	91	24
Vermont	1938	34	32	66	32
	1939	32	35	67	32
	1940	32	54	86	—
	1941	33	55	88	33
	1942	38	62	100	36

*Figures obtained from the *Bulletin of the Association of American Medical Colleges.*

APPENDIX NO. 5

REPORT OF THE COMMITTEE ON PUBLICATIONS

The Committee on Publications has secured Dr. John B. Youmans, associate professor of medicine at Nashville, Tennessee, and recently serving as a colonel in the Medical Corps of the United States Army and chief of the Nutrition Branch of the Office of the Surgeon General in Washington, to deliver the Shattuck Lecture at the annual meeting of the Society in 1946.

The Directory of Fellows has been printed and distributed in accordance with the vote of the Council.

The accounts of the *Journal* have been audited by Hartshorn and Walter and found to be in order. An abstract of this report is appended and copies of the full audit have been filed with the Treasurer and the Committee on Finance.

The committee has continued to supervise the publication of the *New England Journal of Medicine*. The *Journal* has prospered under the able direction of the managing editor, Dr. Robert N. Nye, with the assistance of Miss Davies, the associate editors and the members of the Editorial Board. The Society has reason to be proud of what has been accomplished. In reporting to the Council this phase of the committee's duties we quote from the report made by Dr. Nye to the committee.

During 1945, the *New England Journal of Medicine* experienced its best year under ownership by the Massachusetts Medical Society. The circulation continued to increase and, because of this, operations were profitable. New subscriptions for the year totaled slightly less than those for 1944, the respective figures being 5913 and 6109. On the other hand, cancellations were fewer in 1945 than in 1944, so that the net increase in circulation was the largest in the history of the *Journal*. As of December 31, *Journals* were being sent to 4398

members of the Massachusetts Medical Society, 362 members of the New Hampshire Medical Society, 9766 regular subscribers, 3263 medical students and 299 miscellaneous readers, — a grand total of 18,088 copies, which represents an increase of 3203 for the year.

During 1945 the *Journal* received no money from the Society except those sums paid to the treasurer for subscriptions to the *Journal* by members in the armed forces. In spite of this, cash on hand as of December 31, 1945, amounted to $28,977. A check for $22,800 was turned over to the treasurer of the Society.

During 1945, the editorial board considered 203 manuscripts, of which 129 were accepted for publication. The corresponding figures in 1944 were 194 and 151.

Last fall all limitations on paper were removed. This was fortunate, since the allotted tonnage for the fourth quarter would not have sufficed and an ex-quota allowance over and above that already granted would have been necessary. Since then, the weight of the paper has been increased from forty to fifty pounds, more coated stock has been used, and the pagination has been increased. By the end of 1946, it is hoped that the grade of paper will improve and that the pagination can be increased to the prewar level.

Difficulties regarding printing of the *Journal* still exist. Although at one time last summer copies of certain issues were placed in the mail within a day or so of the date of publication, the spread gradually increased, and at the end of the year copies were being received about two weeks after the date of publication. Furthermore, the delivery of reprints has been held up to such an extent that it is difficult to appease the authors. The delay in printing the *Journal* is due partly to failure to deliver copy according to schedule and to last-minute changes, and partly to difficulties in the printing plant — one of the latter being the time required to run through issues that contain three or four different colors in the advertising pages. It is hoped that these matters can be adjusted during the current year. The press-work continues to be excellent.

With the increase in circulation, particularly at a time when the addresses of those in the armed forces are continually changing, the time required to handle the mailing list is the major item of the office staff. Undoubtedly this will taper off as physicians adopt permanent residencies, but at the moment it necessitates almost superhuman effort. To this has been added an increasing amount of work for officers and committees of the Society, and, in spite of adding one girl to the office staff, Miss Davies and her assistants are still overwhelmed. That they are able to complete what they are asked to do is a miracle, and for this they again deserve the highest commendation.

Although the *Journal* can function during 1946 with the space now available, additional room *must* be provided by 1947. If the rooms now occupied by the Society were obtainable, space would be ample.

The outlook for 1946 appears excellent, so far as the editorial department of the *Journal* is concerned. More papers are being submitted for publication, which will permit the editorial board to be somewhat more critical in their acceptance than it has in the past two or three years. On the other hand, the cost of publishing the *Journal* will markedly increase, largely owing to an increase in the per-pound cost of paper and an approximate 50 per cent increase in tonnage, due to heavier stock and increased pagination. This increase will be somewhat offset by higher advertising rates, but it seems likely that, with the cancellation of the 90 per cent excess profits tax, many of the pharmaceutical houses will curtail their advertising programs. Although the circulation will undoubtedly increase, the increases of the past two years cannot be expected. Consequently, although the *Journal* will *probably* continue to be profitable, a sum of $5000 has been requested in the current budget.

James P. O'Hare
Conrad Wesselhoeft
Oliver Cope
John Fallon
Richard M. Smith, *Chairman*

NEW ENGLAND JOURNAL OF MEDICINE
ABSTRACT OF AUDITOR'S REPORTS

	1943	1944	1945
Current Assets:			
Cash	$6,151.52	$6,148.53	$6,176.73
Accounts Receivable	7,222.39	7,166.12	9,153.56
Capital Assets	960.85	1,213.64	1,146.35
Totals	$14,334.76	$14,528.29	$16,476.64
Current Liabilities	172.21	402.50	605.10
Surplus	$14,162.55	$14,125.79	$15,871.54
Expenses:			
Publication of *Journal*	$49,047.02	$67,609.73	$76,417.78
Publication of reprints	4,563.96	6,123.72	5,150.81
Office and other salaries	23,885.50	25,480.17	30,488.22
Commissions, fees, etc.	4,116.98	5,478.47	7,893.93
Office and sundry expenses	4,731.21	5,009.32	5,130.61
Totals	$86,344.67	$109,701.41	$125,081.35
Revenue:	1943	1944	1945
Advertising	$34,455.36	$38,271.40	$73,852.44
Engraving	1,368.44	1,042.61	974.10
Reprints	3,739.33	4,389.43	6,194.49
Subscriptions (other than M. M. S.)	39,680.53	55,978.15	66,278.18
Miscellaneous	1,248.77	2,083.06	2,327.89
Totals	$80,492.43	$101,764.65	$149,627.10
Net loss or profit to M. M. S.	$5,852.24 (loss)	$7,936.76 (loss)	$24,545.75 (profit)
Net publishing cost; expenses minus (revenue minus subscriptions)	$45,532.77	$63,914.91	$41,732.43
Average paid circulation	10,420	13,447	16,264
Net cost per subscriber	4.37	4.75	2.50
Net cost per member M.M.S. (based on net loss)	1.30	1.81	—

APPENDIX NO. 6

Report of the Committee on Public Health

This committee presents herewith the report of Dr. Elmer S. Bagnall's subcommittee which has considered state legislation to control the dispensing of certain drugs.

This report is informational only but well worth the careful reading by every member of the Society.

The President referred to this committee a request from Miss Margaret H. Tracy of the Greater Boston Nursing Council that the Society appoint a representative to sit on their council. The Council of the Massachusetts Medical Society on October 6, 1937, rejected a similar request because it felt that the Massachusetts Medical Society should not, as a state organization, enter into a purely local problem. The Committee on Public Health recognizes the value of public relations and the necessity of approving such projects as may be sponsored by the Greater Boston Nursing Council, inasmuch as they relate largely to problems of medical interest. Your committee feels that it will be much more logical to approve their programs before they are inaugurated and co-operate with the Greater Boston Nursing Council, rather than have no voice in the formation of its policies. Your committee is of the opinion that such procedure will result in better public relations, better understanding and better co-operation with a closely allied profession. The committee therefore recommends that the president of the Society be authorized to take the initiative in aiding the four district societies concerned in selecting suitable representation on the Greater Boston Nursing Council.

There has been some delay in the appointment of the subcommittee to study ways and means to improve the medical health services to the schools.

We hope that before the annual meeting this committee will be in action and ready to report in the fall.

Roy J. Ward, *Chairman*

Report of the Subcommittee to Consider State Legislation to Control Dispensing of Certain Drugs

Your committee has inquired from the Federal Food and Drug Administration in Washington, the Massachusetts Board of Registration in Pharmacy and the Massachusetts Department of Public Health, as well as the Massachusetts

Pharmaceutical Association and the New York State Medical Society and State Board of Pharmacy, regarding existing laws and regulations bearing on barbiturates, sulfonamides, penicillin and so forth.

We find that under federal law, barbiturates cannot be sold without a doctor's prescription. Refills may be dispensed by the druggist unless the doctor has otherwise directed. The active director informs us that with only about two hundred inspectors to cover the whole field of food, drugs and cosmetics, there can be no adequate coverage of the practices of fifty thousand retail drugstores. He expresses the hope that because this is primarily a local problem, the drug industry will concern itself with corrective measures. The druggist would like the co-operation of the medical profession particularly by stating on the prescription whether or not and how many times refills are authorized in each instance. "N.R." would mean no refills.

In New York City and New York State, there are regulations under the law which are aimed at controlling abuses. In Massachusetts there appears to be opinion that legislation is needed, but there is not yet agreement that the public interest would be best served by seeking legislation now.

The new labeling regulations under the federal law have just become effective and it was agreed at a conference on December 17, 1945, that we should await the experience under that regulation before taking action in this state. This conference included the Commissioner of Health, the secretary of the Board of Registration in Pharmacy, the president and legal counsel of the Massachusetts Pharmaceutical Association and our committee. The pharmacists expressed their gratification for this co-operation in approaching solution of mutual problems.

ELMER S. BAGNALL, *Chairman*

APPENDIX NO. 7

REPORT OF THE COMMITTEE ON POSTWAR PLANNING

Postgraduate courses planned by the Subcommittee on Postgraduate Medical Education have been conducted throughout the State as follows:

District No. 2 — Springfield, Holyoke, Northampton and Greenfield — two courses.
District No. 3 — Worcester, Gardner, Fitchburg and Leominster — two courses.
District No. 4 — Lowell, Haverhill, Lawrence and Newburyport — two courses.
District No. 5 — New Bedford, Fall River and Hyannis — one course.
District No. 6 — Beverly, Salem, Lynn, Danvers and Gloucester — five courses.
District No. 7 — The Greater Boston Area. In this area a comprehensive postgraduate lecture course, open to every licensed physician in the Commonwealth, meeting each Monday and Wednesday, has been in progress since February 18 and will continue to May 15, 1946. Over a thousand doctors have registered for this course and to date the average attendance at each meeting has exceeded five hundred.
In District No. 1 — Pittsfield, North Adams and Williamstown — courses are in preparation.

Through the efforts of the subcommittee on Veterans' Affairs information has been obtained in regard to the need of returning medical veterans for office space, industrial opportunities, assistantships, hospital facilities for the care of their patients and opportunities for a return to practice. Replies to a questionnaire submitted at the postgraduate course in Cambridge indicated that there is no urgent need at present for taking any active steps to secure office space for doctors. Physicians willing to share their offices temporarily might be listed at the headquarters of the Society. Any older physicians wishing a young doctor as an assistant may also find help at 8 Fenway through the Bureau of Clinical Information. All returning physicians are concerned about the impossibility of getting telephone listings before December when the new directory is issued. Information regarding the efforts which the New England Telephone Company is making to aid this problem will be published in the *New England Journal of Medicine*. It is apparent that there will be a need for the continued and enlarged activities of the Bureau of Clinical Information at 8 Fenway to give aid to returning veterans for a period of several years. The questionnaire sent out by the American Medical Association in relation to opportunities for physicians has not been properly filled out by all the eighteen district societies with the result that at 8 Fenway inadequate information is available for those doctors seeking information about opportunities for practice in various parts of the State.

Conference with officers of the Massachusetts Hospital Association was held with regard to providing hospital appointments for veterans.

HOWARD F. ROOT, *Chairman*
LEROY E. PARKINS, *Secretary*

APPENDIX NO. 8

REPORT OF THE COMMITTEE ON LEGISLATION

The committee, representing the eighteen district societies, has had two meetings. In order to facilitate action it has delegated powers to a small executive subcommittee, which has held four additional meetings. Mr. Charles J. Dunn has been appointed legislative counsel.

Federal activities have been chiefly confined to Senate 1606 and its satellite bills. Dr. Reginald Fitz was appointed to represent the Committee on Legislation at the legislative hearings at Washington in co-operation with Dr. Elmer S. Bagnall, the representative of the Council of the Massachusetts Medical Society. Later, at the request of Dr. Joseph S. Lawrence, of the American Medical Association, a special committee of five — Drs. Reginald Fitz, Elmer S. Bagnall, Michael A. Tighe, Dwight O'Hara and James C. McCann — was appointed to handle all federal legislation. Senator Murray stated recently that it would not be possible for state medical societies to be heard at these hearings, but that they were invited to submit statements in writing. Such a statement, embodying the views of the Massachusetts Medical Society, has been sent to Senator Murray.

The usual perennial bills with a sprinkling of new ones have been presented to the Massachusetts Legislature. Your committee has reviewed some sixty-nine bills relative to medicine and public health, and has voted to approve thirteen, to oppose fifteen, and to take no action on forty-one. Most of these bills have now been heard before their respective legislative committees. At the hearings on important bills the Massachusetts Medical Society has been represented by its legislative counsel, by the chairman of the Committee on Legislation or by selected speakers.

The present status of some of the more important bills is as follows: The adverse reports of the legislative committees on the bills on antivaccination and the special board of osteopathy have been accepted by the Legislature. A special committee, with members from the three medical schools and hospitals, ably handled the anti-vivisection bills. A resolve to set up a recess committee to investigate animal experimentation, which was substituted for the adverse report of the Committee on Legal Affairs on H.R. 117, was defeated by a narrow margin in the Senate. The two other antivivisection bills have not as yet come up for final disposal by the Legislature. The bill for reciprocity with other states in licensing physicians has been favorably reported and is now before the Ways and Means Committee.

At the present time bills relative to the following subjects are still in the legislative committees: (1) changes in the requirements for admission to examinations for license to practice medicine, (2) revocation of charters for nonfunctioning and poorly functioning medical and osteopathic schools, (3) the opening of hospitals to any licensed physician, and (4) the establishment of a special chiropractic board.

The Committee on Legislation has considered two matters referred to it by the Council at its meeting on February 6, 1946.

The first was: "that the Massachusetts Medical Society send a return postal card to all members of the Society on the Wagner–Murray–Dingell Bill (Senate 1606) requiring a 'yes' or 'no' answer as to whether or not they favored this legislation."

After due discussion, the committee voted not to make a poll of the Massachusetts Medical Society in respect to Senate 1606. The committee believed that such a poll would be ineffective since a previous poll on HR 1328 resulted in only about one fifth of the members voting. Also the results would be misleading because those who favor such legislation would vote, and those who were opposed would be less likely to reply. Furthermore, a divided vote would not strengthen the position in Washington of the representative of the Society, who now has definite instructions from the Council to oppose S. 1606.

The second matter referred to the committee by the Council is as follows:

> That it is the sense of the councilors of the Norfolk District that a list of the final vote of the Massachusetts Legislature on the Chiropractor Bill of 1945, be published in the *New England Journal of Medicine*, this list to be published by districts rather than alphabetically, and if space is difficult to obtain, that it be published in several successive issues a few districts at a time.

After careful deliberation the committee voted unanimously to disapprove of publishing such a list. It was felt that its publication would seriously interfere with the efforts of the committee in changing the votes of members of the Legislature in respect to this bill, and Mr. Charles J. Dunn, the legislative counsel for the committee, advised against such publicity as seriously hampering his work.

DAVID L. BELDING, *Chairman*

APPENDIX NO. 9

REPORT OF THE MASSACHUSETTS DELEGATES TO THE COUNCIL OF THE NEW ENGLAND STATE MEDICAL SOCIETIES

The Council of the New England State Medical Societies was formed in the summer of 1945. Its organizational meeting was held in Providence, Rhode Island, on July 18, 1945. The Massachusetts Medical Society was represented at this meeting by Dr. Dwight O'Hara, president-elect, Dr. Allen G. Rice and Dr. Michael A. Tighe, secretary of the Society.

All the state medical societies of New England were represented.

The purpose of the Council, as outlined by the temporary chairman, Dr. John F. Kenney, of Pawtucket, was to bring about a closer co-operation between the state medical societies of New England in the development and maintenance of the highest standards in the conduct and administration of medical care, in the development of plans relative to the better organization of medicine and in the furtherance of plans to improve the health of all the people in the New England states.

He added that the Council shall not be concerned with the problems that are peculiar to the individual state but shall deal with the larger matters in which all the state medical societies of New England are concerned.

He emphasized the fact that the Council shall not seek to supersede the control now exercised by the governing bodies of each respective state medical society, or that of the House of Delegates of the American Medical Association.

The annual meeting of the Council was set for the third Wednesday in April of each year. Other meetings were provided for at the call of the president of the Council.

It was decided at this meeting that the Council would take no stand on any matter before it unless the will to do so was unanimous.

It was voted that each of the New England state medical societies be asked to support this Council as an experiment for one year by the contribution of one hundred dollars. The method by which the Council would be financed beyond this time was left for a future time.

The following officers were elected to serve until the third Wednesday in April, 1946:

Dr. James R. Miller, *President*
Dr. John F. Kenney, *Vice-President*
Mr. John E. Farrell, *Executive Secretary-Treasurer*

The Council held its second meeting in Providence, Rhode Island, on October 14, 1945.

At this meeting the Council voted to join the New England Council — an organization for the most part concerned with the business interests of New England.

The need for a program by the civilian doctor, whereby the veteran could obtain the medical care to which he was entitled under the law, was discussed.

The importance of informing the public with regard to pending legislation was stressed.

Medical-care plans came under discussion.

The Council met again on February 3, 1946. This meeting was held at 8 Fenway, Boston. The special guests of the Council on this occasion were the president of the American Medical Association and certain members and associates of the Council on Medical Service and Public Relations of the American Medical Association.

The program of this meeting was as follows:

PROGRAM

1:15 p.m.	Registration.
1:30 p.m.	Call to order. Presiding: James R. Miller, M.D., president, Council of the State Medical Societies of New England; trustee, American Medical Association.
1:40 p.m.	Greetings to Conference. Roger I. Lee, M.D., president, American Medical Association.
1:50 p.m.	"The Work of the Council on Medical Service and Public Relations of the American Medical Association." "Prepayment Medical Care Plans." Mr. Jay Ketchum, executive vice-president, Michigan Medical Service; chairman, Advisory Committee on Prepayment Medical Care, Council on Medical Service and Public Relations. "Fourteen Point Constructive Program for Medical Care." Louis H. Bauer, M.D., member of Council on Medical Service and Public Relations; trustee, American Medical Association.
2:20 p.m.	Discussion.
2:40 p.m.	"The Returning Veteran and the American Medical Association." Major-General George F. Lull, M.C.
3:00 p.m.	Discussion.
3:10 p.m.	"The Washington Front." Joseph S. Lawrence, M.D., director of the Washington Office of the Council on Medical Service and Public Relations of the American Medical Association.
3:30 p.m.	Discussion.
3:45 p.m.	"The Hill–Burton Bill and the Hospital System." Fitz Arestad, M.D., assistant secretary, Council on Medical Education and Hospitals of the American Medical Association. Discussant: Reginald Fitz, M.D., member, Council on Medical Education and Hospitals of the American Medical Association; president, Massachusetts Medical Society.
4:15 p.m.	"Round Table Discussion on Public Relations." "Co-operative Community Relationships." W. W. Bauer, M.D., director, Bureau of Health Education, American Medical Association. "The Job of State and County Societies in Medical Public Relations." C. Charles Burlingame, M.D., chairman, Committee on Public Education, American Psychiatric Association; chairman, Committee on Public Relations, Connecticut State Medical Society.
4:45 p.m.	Discussion.
5:15 p.m.	Adjournment.

ALLEN G. RICE
DWIGHT O'HARA
MICHAEL A. TIGHE

APPENDIX NO. 10

REPORT OF A MASSACHUSETTS REPRESENTATIVE TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

As one of your members of the House of Delegates at the meeting of the American Medical Association in Chicago from December 1 to 5, 1945, I have the following report to make:

This was the first meeting in one and a half years — much too long an interval — since so many things of very great importance were required to be discussed and acted on, and it must be remembered that the House of Delegates determines the policy of the American Medical Association and the trustees merely carry these policies out. Incidentally, it was proposed and will be voted in July next to have two meetings of the House of Delegates a year, one at the regular convention time and the other in mid-winter, presumably in Chicago.

There was an unusually good attendance (171 out of 176), really remarkable when one considers the difficulties of traveling and securing hotel accommodations. One comes back always from these meetings with renewed convictions that this is a real medical democracy, without pressure groups or blocs, composed of the very best men from all over the country who have only one thing in mind, the furtherance of medicine.

We went through three really very intense days without any breaks; one got the impression that we were attempting to do rather too much in too short a time. As an explanation of that, however, was the feeling that we were uncertain as to what was the opinion in Washington, when the hearings on the various compulsory sickness insurance bills were coming up, and the collateral lay pressure as shown, for example, in the rather large advertisement in the *New York Times* and other big metropolitan dailies appearing almost simultaneously with our meeting. These advertisements contained the names of three or four hundred prominent people in national life and various large business concerns, all endorsing President Truman's health message. These influences unquestionably had some effect in making the House of Delegates work under pressure.

The usual addresses of the President and the Speaker were read but easily the best address was one given by President-Elect Roger Lee on the second evening of the meeting, the subject being, "What Is Medical Care?" His address deserved a much larger visual audience. I say this without prejudice and uninfluenced by any affection or local pride. In the absence of a large American Medical Association meeting, the audience on the evening of the second day was rather small and the address was not broadcast but it was printed in the December 15 issue of the *Journal of the American Medical Association* and should be read by everyone. As a matter of fact these addresses, those of the President, the President-Elect and the Speaker, should be read by all members. These appear under the minutes of the meeting in the December 15 and 22 issues. Obviously these addresses are much too long to review or even summarize.

The organization of the American Medical Association House of Delegates calls for many reference committees, this year fourteen of them. To the reference committees are referred by the Speaker the business matters as they turn up. The members of these committees work long and late, particularly this year. Of our delegates, Walter Phippen was chairman of the important Reference Committee on Medical Care of Veterans, with Leland McKittrick as associate. Also co-operating on that committee was Henry Viets, section on nervous and mental diseases. The report of Dr. Phippen's committee was splendidly done and well received. (At this point I should say that in our opinion there would have been no difficulty whatever in Dr. Phippen's being elected a trustee had he cared to serve; he is well known and highly thought of, and we were prepared to nominate him up to the very last moment had he chosen to stand for election, but he felt that he could not afford the time. In his place Dr. James R. Miller of Hartford, Connecticut, a most able man, was elected without any difficulty.) Dr. Dwight O'Hara served well and conscientiously, as always, on the Committee on Reports of the Board of Trustees and Secretary.

I need not discuss how these reference committees sit in various outside rooms and listen to the pros and cons on any measure that comes up. Suffice to say that the members work conscientiously and well, and it devolves on the chairman of each committee to write up the report of his committee and present it to the secretary after being read to the House of Delegates as a whole. I do not remember, in my experience, that I have ever known reference committees to work as they did on the occasion of this meeting.

Now as to the highlights of our first day: the December 1 issue of the *Journal of the American Medical Association* was distributed to the members the day before you received your copies here, with the splendid and logical editorial "The Present National Health Problem and the New Wagner Bill." As said above, almost coincidentally with this meeting a large paid advertisement appeared in the *New York Times* and other metropolitan dailies, obviously having in mind an offset to the meeting of the House of Delegates. There can be no question that these things hung like a shadow over the meeting and made for increased pressure. Unquestionably these various activities accelerated moves to put out voluntary prepaid medical care measures and the correlation and co-ordination of them countrywide to demonstrate what could be done in that way. As we know, there are about fifty-nine different plans for medical service, in twenty-five different states at the present time, and an attempt must be made to get these into some more or less general scheme of efficiency.

Without question the appearance of General Hawley of the Veterans' Administration was most happy and stimulating. He is a wholesome, forthright, understanding and sympathetic man, and his address before the House of Delegates, published in the December 22 issue of the *Journal of the American Medical Association*, deserves most careful reading.

Other things of interest were the following: recommendation of the transfer of the Children's Bureau from the Department of Labor to the Public Health Service; organization of a new section on general practice; approval of a national research foundation under the control of a board of directors composed of scientists; recommendation of the appointment of a Medical Cabinet officer; unanimous adoption of a proposal to create a national medical plan to provide voluntary sickness insurance for all Americans at cost, within their means, fostering the development of this insurance in areas where there are none such; the Council on Medical Education and Hospitals of the American Medical Association does not intend to remove any hospital from its list of hospitals approved for internships or residencies which furnishes teaching facilities to any veteran medical officer who is eligible for educational benefits under the Servicemen's Readjustment Act, — provided the veteran is legally eligible for medical licensure in the state in which the hospital is located; and disapproval of Senator Pepper's super-EMIC program, which would have allowed the Children's Bureau to provide free medical care for every United States child under twenty-one and for every United States woman during pregnancy. Also disapproved were those portions of the Wagner–Murray–Dingell bill which would have had the effect of socializing medicine.

The members should read the excellent article "Medical Care for the American" by Dr. Louis Bauer in the December 1 issue of the *Journal of the American Medical Association*. This is a most helpful article and represents a lot of thought on the part of the committee of which he was chairman.

Great pride was felt by all of us in the selection of Dr. George R. Minot for the Distinguished Service Medal, particularly when only a few years ago Dr. Elliott P. Joslin was the recipient.

George Lull was appointed as assistant to Olin West and probably his successor. Dr. Lull impressed everybody at the meeting with his extremely great capabilities. He is a straightforward, entirely capable man, succeeding, however, a man whom the American Medical Association can badly do without — Olin West. Olin West is a name to most doctors but personally he is a tower of strength to the organization and it will be a sad day when he gets out. His health is not too good and has not been for the last couple of years.

The resignation of Speaker Shoulders was rather dramatic and unexpected. He was promptly nominated, however, for the position of president-elect and in a rather close election beat out E. J. McCormack, of Toledo, Ohio, another extremely able man and a most active member of the House of Delegates; the vote was 77 to 51. Dr. Shoulders has been speaker for many years and is a hard worker and a capable man. Last year you will remember, in order to have Dr. Lee become president-elect, his resignation as a trustee was asked for (by agreement) so that he might

become eligible for election as president-elect, which happened by unanimous vote.

The election of Dr. Fouts to become speaker naturally followed in order because he has been assistant speaker for several years at least. He is a very hard, earnest worker and in my memory the first man from the x-ray field to be elected to that position. The election of Francis F. Borzell, of Philadelphia, to be vice-speaker was an excellent choice. He is another hard working, entirely co-operative man.

Many spoke of the work of James McCann, of Massachusetts, in connection with his work on the principles of the Blue Shield. We are also fortunate, I think, in Joseph Lawrence, who serves as a very good sounding post for the American Medical Association in Washington.

The 1946 meeting will be held in San Francisco from July 1 to 5; the delegates from California spoke of their plans and hopes and felt certain that by that time transportation difficulties would be largely a matter of history, emphasizing the availability of hotels to take care of the number probably coming. The meeting in 1947 is to be held in Atlantic City, and that in 1948 in St. Louis.

The meeting dissolved after three very strenuous days and with a feeling, as I have said above, that almost too much was attempted. But the reason for the attempt I have also stated — the element of uncertainty in Washington.

DAVID D. SCANNELL

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Weekly Clinicopathological Exercises

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

BENJAMIN CASTLEMAN, M.D., *Associate Editor*

EDITH E. PARRIS, *Assistant Editor*

CASE 32371

PRESENTATION OF CASE

A twenty-four-year-old farmer entered the hospital because of attacks of pleuritic pain.

Four years before admission, while lifting packing cases, the patient had a sudden knifelike pain in the left chest, in the region of the axilla. It was made worse on deep inspiration and on change of position. A physician took x-ray films, which were interpreted as showing pleurisy. There were no chills, fever, cough or general malaise. The chest was strapped, and the pain subsided completely for a year, when an identical attack occurred while the patient was at work. X-ray studies showed a thickened pleura. Three or four days of strapping again gave complete relief for a year, when a third attack occurred, with a temperature of 104°F., which lasted a few hours. A slight cough accompanied the attack, in the course of which he spat up about 30 cc. of bright-red blood. An x-ray film taken at a tuberculosis sanatorium was reported as showing a thickened pleura. The fourth and severest attack occurred five months before admission while the patient was driving a truck. Again the temperature rose to 104°F. and subsided within a few hours. There was no cough, sputum or hemoptysis. The pain lasted three or four days. X-ray examination at the sanatorium was said to show two or three "spots" of tuberculosis in the lung. Three additional x-ray films at another sanatorium were reported as showing only a thickened pleura. Four months before admission drenching sweats occurred almost every night for three weeks but did not recur. During this acute episode the patient lost 15 pounds, which he rapidly regained on returning to work. During the three months before admission he felt well for several days at a time and then, particularly in poor weather, felt weak, lost his appetite and was forced to go to bed for a few days. These attacks were not accompanied by pleuritic pain or fever. Because of persistent symptoms he consulted another physician, who after fluoroscopy stated that the left lung was "dead" but that the patient did not have tuberculosis and could be cured in ten weeks. No tuberculin test, sputum examination or chest tap had ever been performed. For a few weeks before admission, while the patient was doing heavy work, dyspnea, accompanied by a slight cough productive of a small amount of yellow sputum, occurred for the first time. There had been no known exposure to tuberculosis.

Physical examination revealed a slightly diminished expansion of the left chest. The percussion note was dull over the entire left chest, with diminished breath sounds and loss of tactile and vocal fremitus. No rales were heard.

The temperature was 100.5°F., the pulse 100, and the respirations 20. The blood pressure was 128 systolic, 86 diastolic.

Examination of the blood showed 12.6 gm. of hemoglobin and a white-cell count of 11,500, with 67 per cent neutrophils. The urine was normal. The sedimentation rate was 6 mm. in fifteen minutes, 24 mm. in thirty minutes, 30 mm. in forty-five minutes and 33 mm. in sixty minutes.

An x-ray film of the chest showed the diaphragm to be high and fixed on the left side. There was extensive density throughout the lower third of the left lung field. The heart shadow was displaced to the left, and the hilus was displaced downward. In the lateral view the density appeared to represent a collapsed left lower lobe.

Bronchoscopy was performed on the fourth hospital day. The lower lobe bronchus was reddened, containing a moderate amount of thin, bloody secretion and some friable tissue that bled easily and was regarded as being possibly inflammatory. On the posterior wall, however, there was one

area where the tissue was somewhat firmer and smoother. The terminal bronchi were not visible, owing to obstructing masses of hemorrhagic tissue. Biopsy of the left lower bronchus showed chronic inflammation. A slight hemoptysis occurred four days later, when an x-ray film showed no change. The patient's condition was unchanged after bronchoscopy.

An operation was performed on the sixteenth hospital day.

Differential Diagnosis

Dr. Lowrey F. Davenport: This patient, if the history is accepted at face value, had had chronic recurrent pleurisy for four years, the last attacks becoming more acute and finally showing what appeared on x-ray examination to be collapse of the left lower lobe. In the differential diagnosis the following factors should be considered: the initial history of trauma, the question of whether there was an underlying tumor, and the possibility that the whole picture could be explained on the basis of chronic infection. Before the implication in the record that all the difficulty was pleural is accepted too readily and since x-ray study was reported as showing the disease to be in the lower lobe, it would be well to see the films — lesions below the diaphragm, causing elevation of the diaphragm and partial compression of the lung, are often misleading. A herniation through the diaphragm may cause obstruction to major bronchi.

Dr. Milford D. Schulz: The films of the chest show an area of increased density occupying the position of the left lower lobe, which seems to be reduced in size. The gas bubble of the stomach rides higher than usual. The left leaf of the diaphragm is not visible, but because of the position of the gas bubble in the stomach I am certain that it is elevated.

Dr. Davenport: Are you also certain that there is no eventration of the diaphragm, with abdominal organs in the chest?

Dr. Schulz: There is nothing to make one think of such a condition. The right lung and the chest elsewhere appear normal. I do not see the tuberculosis that was reported to have been found elsewhere in the chest.

Dr. Davenport: On the basis of the symptomatology, which includes no gastrointestinal disturbance in this period of four years and on the basis of the x-ray films, the premise that the lesion was actually above the diaphragm can be accepted. I believe that one can go farther on the basis of this film and rule out any mechanical obstruction due to such a lesion as aneurysm of the aorta, which can block the lower lobe and cause confusing symptomatology. Hilar lymph nodes large enough to cause such obstruction are usually of sufficient size to cause some suspicion in the x-ray films.

Taking all these points in chronologic order in attempting to arrive at a final diagnosis, one should evaluate the onset of the illness and determine whether the abrupt onset four years previously was traumatic enough to explain the whole picture. The presenting symptom when the patient first consulted a physician — the sudden onset of left-sided chest pain while he was at work — suggests the possibility of spontaneous pneumothorax. X-ray films taken at that time, however, failed to disclose any air within the chest and showed only a thickened pleura. The subsequent course, with repeated attacks becoming progressively severer and finally accompanied by infection, is not the picture that is seen with spontaneous pneumothorax. I believe that the persistence of thickened pleura over a period of years means the persistence of some type of infection. A thick pleura is often seen on x-ray examination, particularly in cases of long-standing infection in which the infection, whether pyogenic or tuberculous, finally subsides and the shadow that is called thickened pleura in the x-ray film also clears. The trauma that called the patient's attention to some pre-existing disease four years previously is rather difficult to evaluate, but I believe that trauma can be dismissed as being responsible for the subsequent events.

The question of both benign and malignant tumor must be considered. Some of the most puzzling cases have occurred when the primary difficulty was benign. Adenomas cause bronchial blockage, with suppuration behind such a block. The rule in this type of case, however, is that such patients present evidence of infection, with block behind the tumor mass and subsequent extension of the suppuration into the pleura, so that such a presenting symptom as pleurisy is not usually the initial complaint. Such a possibility, of course, cannot be clearly excluded on the basis of the information that is given in the record, but for the moment will be regarded as unlikely.

So far as malignant tumors are concerned, one is also faced with the four-year history, as well as symptoms that, according to the record, quite clearly began with pleurisy. This raises the question of a pleural endothelioma, a type of cancer that is not accepted as being a frequent neoplasm in the chest. The general opinion is that most cases showing pleural invasion at autopsy have cancer in the bronchus as the original focus. Such cases are reported but are rare in our experience, and a four-year history of a wildly growing pleural endothelioma is most unusual. Malignant tumor of the bronchus must be considered, but is unlikely in view of the fact that the symptoms began four years previously. The periods of as long as a year between attacks are unusual with malignant tumor. The onset and the lack of evidence of suppuration are against the possibility that the initial process was

due to a plugging of a bronchus by either a benign or malignant tumor.

If one gives little weight to the onset of the symptoms on a traumatic basis and further to the possibility of a benign or malignant tumor, a third possibility remains — namely, infection, which would have to be extremely chronic to last four years and explain the whole picture. The ordinary pyogenic infections can probably be excluded, and yet such infections are often present for a number of years. In such cases the diagnosis is obscure, but the presenting symptoms and subsequent course move more swiftly than those in the case under discussion. So far as infection is concerned, infectious granulomas, such as syphilis, tuberculosis and the obscurer types of fungous infection should be considered. Syphilis of the lung, if one excludes congenital syphilis, is an extreme rarity, and I use that redundancy deliberately. It is consequently rather difficult to tie up any of the symptoms with even the types of syphilis of the lung that are reported in the literature, and such a diagnosis can probably be dismissed.

The infectious granulomas of the fungous type can be confined to actinomycosis, because actinomycosis in this part of the country is the most frequent of the fungous infections and the one that has given the obscurest forms of pulmonary disease for long periods of time. The only clue in the history is the fact that this patient was a farmer, and actinomycosis occurs oftener among the rural than among the urban population. Cases among city workers have recently been seen in this hospital, however. I recall a stenographer some years ago who to the best of her recollection had not even spent her vacation in the country. She had a long history, with x-ray changes suggestive of tuberculosis for a period of years, and not until the chest was opened was the diagnosis of actinomycosis made. There are several points to remember in considering such a possibility. The sulfur granules show up only in accumulations of pus, and it has been our experience that the fungus in the sputum is extraordinarily difficult to identify. There are several considerations against accepting this as a likely diagnosis. First, it is relatively rare in spite of the fact that it is one of the types frequently encountered. Secondly, actinomycosis of any appreciable duration almost always causes draining sinuses in the chest, although cases have been reported in which actinomycosis has been a factor during a period of years without causing the typical draining sinus that is usually associated with this type of disease. A primary pulmonary form of the disease, with secondary pleural involvement, occurs, and most of these cases show hemoptysis, which was noted in the case under discussion.

The laboratory data are meager, and I take it that the statement that there were no examinations of the sputum and no tuberculin test or chest tap is true, and that no bronchoscopic aspiration was performed.

Dr. Benjamin Castleman: That is correct.

Dr. Davenport: We then come to the last and I believe the most difficult diagnosis to consider seriously, accepting the fact that we have a rather obscure history and rather less than the usual data that are furnished in such a case. We do not have a negative blood Wassermann or Hinton test to lean on. Because of the greater incidence of tuberculosis in the population, an atypical form of tuberculosis causing this symptomatology is much more frequent on a percentage basis than a typical form of an obscure type of condition. This is the possibility to which most weight should be given. If the onset four years previously is accepted as being due to infection of the pleura, the recurrent pleurisy is quite consistent with tuberculosis, causing fibrinous and later fibrous adhesions with elevation of the diaphragm. Uncomplicated tuberculous pleural effusion is probably never seen. Most authors believe that even a primary pleural effusion not complicated by parenchymal aspects, as in the case under discussion, is due to some underlying focus of disease in the lung, whether or not demonstrated in the x-ray film. In this case, after four years of repeated attacks of pleurisy, there was increasing evidence of involvement of the left lower lobe, which can be explained on the basis of involvement of the bronchial mucosa by tuberculosis. This condition has become more and more appreciated in the last few years, since it has been looked for and since repeated bronchoscopic examination has been performed. It accounts for the previously obscure localization of active tuberculous disease in the bases, as well as for the fibrotic stenoses with partial obstruction, atelectasis and poorly aerated lower lobes that are the end result of a fibrostenosis due to tuberculosis. The one thing that worries me about the diagnosis of tuberculous pleurisy in addition to associated bronchial tuberculosis is that in my experience such patients have a distressing, continuous cough. In this case, as the record points out, there were long periods during which the patient was free from all pulmonary symptoms. In such a situation sputum is often difficult to obtain, and if the disease is active in the bronchial mucosa there is a certain amount of blockage of the parenchymal disease and the patient may go for a long time without the demonstration of tubercle bacilli on sputum examination. It is somewhat unlikely that the patient was studied in this hospital and in the sanatorium without more emphasis on the sputum examination. I rather expect that if the complete history were known there would be disconcerting evidence that previous sputum examinations performed elsewhere were negative. Since negative examinations have been reported in cases that subsequently

proved to be active tuberculosis, that point need not disconcert us too much. It must be realized that there may have been a bronchial tumor, with secondary infection in the bronchus, and that the bronchoscopist at the time of examination may have run into inflammatory tissue above the level of tumor. We are told that a biopsy showed only chronic granulation tissue, and there is no definite evidence of sputum studies. The most probable diagnosis must be chosen on a percentage basis. Tuberculosis, being a frequent type of infection, produces an inflammatory picture similar to that reported in this case. I am well aware that without more evidence and more definite studies than were reported in this case the diagnosis may come as a surprise.

DR. EDWARD B. BENEDICT: What was your final diagnosis?

DR. DAVENPORT: Tuberculosis.

A PHYSICIAN: Do you consider multiple infarcts a possibility?

DR. DAVENPORT: Not a likely possibility, in view of the subsequent episodes that were accompanied by sputum and a high temperature.

DR. BENEDICT: I bronchoscoped this patient, and my preliminary diagnosis was adenoma of the bronchus. That was based on the fact that he was a young man with a history of repeated hemoptysis and repeated attacks consistent with intermittent bronchial obstruction. When I looked down the bronchus there was one area that had the smooth, firm appearance that is consistent with adenoma. The biopsy report, however, was chronic inflammation so that we were somewhat puzzled, but Dr. Richard Sweet who did the operation decided that resection was indicated, on the basis of x-ray evidence of a collapsed lobe.

CLINICAL DIAGNOSIS

Adenoma of bronchus.

DR. DAVENPORT'S DIAGNOSIS

Collapse of left lower lobe, due to bronchial obstruction, presumably tuberculous.

ANATOMICAL DIAGNOSES

Adenoma of bronchus.
Bronchiectasis.
Chronic pneumonitis.

PATHOLOGICAL DISCUSSION

DR. CASTLEMAN: I am sorry that Dr. Sweet is not here. His preoperative note reads, "This man will not really get well until he has a lobectomy." When lobectomy was performed, a small, shrunken, hard, left lower lobe that was completely atelectatic and moderately adherent all around and to the diaphragm as well was found. When I examined the lobe in the operating room, there was a good-sized tumor in the main left lower bronchus. I could not be absolutely sure whether or not the resected edge contained tumor, but a rapid frozen section from the resected edge revealed tumor typical of a benign adenoma. Dr. Sweet, therefore, took out the upper lobe because the tumor would undoubtedly continue to grow in the bronchial stump that still remained. He had originally resected as much of the lower-lobe bronchus as he could without sacrificing the upper lobe.

When the specimen was examined later there was complete occlusion of the dorsal division bronchus leading to the apex of the lower lobe. About half the tumor was extrinsic to the original tumor in the dorsal branch, the other half having extended through into the posterolateral division bronchus, which was almost completely occluded. The tumor measured 2 cm. in its greatest diameter. There were numerous enlarged inflammatory lymph nodes all around this bronchus and all along the trachea. A section through the lung parenchyma itself showed extensive bronchiectasis and pneumonitis.

DR. BENEDICT: This is an example of what Dr. Davenport meant when he said that one sometimes finds a great deal of inflammatory tissue around the tumor and that a biopsy is often not diagnostic.

DR. ALLAN M. BUTLER: I think that this case is also a good illustration of the importance for a surgeon to decide not to obtain further information but to operate, because operation was indicated no matter what the diagnosis was.

DR. CASTLEMAN: The patient had, as the physician said, "a dead lung."

DR. ALLEN G. BRAILEY: What was the cause of the pleurisy?

DR. CASTLEMAN: Bronchial obstruction produced pneumonitis, followed by pleurisy.

CASE 32372

PRESENTATION OF CASE

A nineteen-year-old unmarried woman entered the hospital because of pain in the lower abdomen.

The patient was apparently well until eight hours before admission, when she awoke with a feeling of indigestion and epigastric discomfort. Shortly thereafter the discomfort shifted downward, and she began to have increasingly severe lower abdominal pain. She also became nauseated and vomited everything eaten. A physician sent her to the hospital after administering morphine and atropin.

The patient began menstruating five years before entry, and the periods had always been normal and regular. The last menstrual period, which had begun two days before entry, was in no way unusual. She persistently denied sexual intercourse or having missed any recent period. She had had

a slight intermenstrual discharge. The appetite had been good, although she suffered from occasional constipation or transient indigestion. She had had a normal bowel movement on the day of entry. There had been no urinary symptoms.

Physical examination revealed the heart and lungs to be normal, except for a soft systolic murmur, varying somewhat with respiration and heard over the entire precordium, although it was loudest at the apex. The abdomen was soft, and a smooth, firm, slightly tender lower abdominal mass could be felt in the midline, reaching up to the umbilicus. Peristalsis appeared normal although somewhat sluggish. Pelvic examination revealed a narrow introitus, which seemed to be virginal. The cervix was normal to palpation, and no pain was elicited by motion. The fundus was small and could be felt separate from and anterior to the abdominal mass, which had pushed it somewhat to the left. There was some tenderness high in the left vault. The patient was menstruating.

The temperature was 99.4°F., the pulse 100, and the respirations 24. The blood pressure was 130 systolic, 70 diastolic.

Examination of the blood revealed a hemoglobin of 12 gm. and a white-cell count of 18,000, with 86 per cent neutrophils. The urine was normal.

An operation was performed.

Differential Diagnosis

Dr. Gordon A. Donaldson: The diagnosis in this case is either quite obvious or extremely obscure, and in keeping with the usual outcome of cases discussed at these exercises I suspect that we had better stick to the most obvious. Certainly the resident in the Emergency Ward who saw this patient believed that the diagnosis was obvious because the studies obtained were minimal. I take it that no x-ray films were made.

Without laboring too many other possible diagnoses, there are one or two features that are worthy of comment. In the first place, if one were looking for a more typical story for an acute inflammation of the appendix, it would be difficult to find even in Zachary Cope's description of typical acute appendicitis. In this case there is the classic type of pain, with the typical shift downward, consistent with the history of eight hours' duration. The nausea and vomiting, which I suspect occurred after the pain, classically in acute appendicitis often precede the pain. This is a minor point, however, the difference probably depending on whether the appendix is mechanically obstructed or diffusely inflamed. A diagnosis of acute appendicitis with appendiceal abscess formation cannot be made, in view of the pelvic and lower abdominal findings. An appendiceal abscess is not likely to reach such proportions in such a short time.

With this history of intestinal obstruction, probably reflex epigastric discomfort and radiation of pain down into the seat of the disease, one must also think of diseases along the course of the terminal ileum. Could there have been a lesion in a Meckel's diverticulum — perhaps a foreign body? We have recently seen a patient with a huge gallstone in a Meckel's diverticulum that finally led to ulceration and abscess formation. Tumors in this region and intussusception are all inconsistent with the large pelvic and lower abdominal mass. Presumably, this patient had had rheumatic fever, but I cannot tie in such a mass with a diagnosis of rheumatic fever in a patient who eight hours previously had been well. I do not like the reference to the possibility that she was pregnant; I consider the story and physical findings inconsistent with extrauterine pregnancy.

Other possibilities in the region of the pelvis come to mind: hematosalpinx in one tube, presumably the right (but I think that is unlikely), and torsion of a pedunculated fibroid, which had grown during the course of menstrual life. If this was a fibroid it was certainly of tremendous size, and one that is not seen in a patient of this age.

Throughout the physical examination attention is focused on the lower abdominal mass, which evidently lay posterior to the fundus of the uterus, displacing it anteriorly and slightly to the left. It was of such size and weight that it was probably responsible for the pelvic congestion and intermenstrual discharge. This tumor, moreover, had undergone a recent inflammatory change, probably the result of torsion, which accounts for the elevation of the white-cell count and temperature, and was tender to palpation. The most obvious organ involved and the one responsible for this patient's symptoms was the ovary, probably the right ovary, and in a patient of this age the likeliest diagnosis is dermoid cyst.

Dr. Benjamin Castleman: A cyst that had twisted?

Dr. Donaldson: Yes.

Dr. Rodolfo E. Herrera: When we saw this patient we also could not help being impressed by the mass in the abdomen, and that was the reason for the lack of additional laboratory and x-ray studies. The mass was easily palpated on abdominal examination, and our preoperative diagnosis was the same as Dr. Donaldson's. We examined the pelvis and rectum, both with and without anesthesia, and the only thing that was disturbing about the diagnosis of ovarian cyst was that the mass could not be felt well from below and did not seem to rise from the pelvis. We explained the difficulty simply by saying that it had a long pedicle that had twisted.

Clinical Diagnosis

Twisted ovarian cyst.

Dr. Donaldson's Diagnosis

Twisted ovarian dermoid cyst.

Anatomical Diagnosis

Double intussusception and volvulus of ileum, led by adenomatous polyp.

Pathological Discussion

Dr. Herrera: At operation the cystic mass was found to be bowel, with a double intussusception, which in addition had rotated on the mesentery so that the intussusception below it had also formed a volvulus. It was impossible to reduce the intussusception, and since the bowel was obviously gangrenous, resection was carried out with a side-to-side anastomosis.

Dr. Castleman: The specimen we received in the laboratory consisted of a double ileoileal intussusception. We were also unable to reduce the intussusception because of the extensive gangrene and interadherence. By cutting across the bowel, we unraveled the different layers and found that the mass that led the intussusception was an adenomatous polyp, which was almost completely infarcted. The first intussusception, which was about 25 cm. in length, in turn had intussuscepted for a distance of 30 cm., so that 60 cm. of small bowel was involved in a double intussusception. I believe that this was the youngest patient in the adult series that we have seen. When the condition occurs in children, it is usually not due to tumor.

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NEW ENGLAND POSTGRADUATE ASSEMBLY

The program of the fifth New England Postgraduate Assembly, which will be held on October 30 and 31, appears elsewhere in this issue of the *Journal*. These meetings were inaugurated in 1938, were held through the following three years but were canceled during the war years. Some idea of their popularity and their value as one means of postgraduate medical education may be gained from the fact that in one year the total registration was 925.

As in the past, the Program Committee has arranged for a series of talks by eminent physicians who, by and large, are not residents of New England. The choice of topics has been excellent and has resulted in a program that should prove to be of interest to all practicing physicians.

There are two innovations. In the first place, the meetings will be held in downtown Boston, — at the Hotel Bradford, — which should appeal to those who plan to stay in Boston during that time. Secondly, there will be a technical exhibit by a number of commercial firms, which should offer an excellent opportunity for all registrants to become acquainted with recently introduced drugs, the latest type of instruments and other material currently available to practicing physicians.

The facts that the majority of medical officers have been discharged from active duty and that civilian physicians have been relieved of a great deal of the pressure under which they worked during the war years should result in a record-breaking attendance. It would be difficult to devise a two-day program that would offer more in the way of a means of becoming acquainted with recent advances in diagnosis and treatment.

SHORTAGE OF NURSES

Much has appeared recently in the lay press regarding the critical situation created by the shortage of nurses, and the *Journal* commented on it editorially in the July 11 issue. Many reasons have been advanced for the present crisis, but little has been done to remedy it. An editorial, entitled "The Training of the Graduate Nurse," in the July issue of the *Virginia Medical Monthly* suggests an underlying cause that has been present for many years and offers suggestions for its correction.

This editorial maintains that recent trends in nursing education have been largely responsible for the present situation. It is certainly well recognized that, at least in Massachusetts and probably in other states, many of the small nursing schools have been forced to close because they could not meet the increasing educational requirements for the registration of their graduates. In other words, in the attempt to raise the standard of nurses a sufficient proportion of persons who are willing to

take care of the sick has not been made available. Obviously it is highly desirable to train a certain number of graduate nurses who have had a broad educational background so that they can fill teaching, administrative and supervisory positions. On the other hand, the chief function of a nurse is the bedside care of the patient — a duty that some of the graduates of the modern school of nursing appear loath to assume.

The editorial states that the Virginia Board of Nurse Examiners should seek a solution without being influenced too much by sources that insist that most schools should turn out a type of graduate who is able to pass the board examinations of any or all states. It suggests that the Virginia schools immediately convert to a two-year course, with a substantial reduction of the didactic work, and that the large schools, particularly those in teaching centers, should be encouraged to offer postgraduate courses in specialized training for a certain number of these two-year graduates. Undoubtedly two years is an adequate period to train a person in bedside nursing. But, the editorial points out, one of the major objections made by nursing educators is that a two-year graduate is not recognized by the boards of nursing in many states. The answer is simple. If a two-year graduate so desires and has the necessary aptitude, she may continue her education for one or more years and thus become eligible to take the board examinations in the thirty-eight states that now require three years of training, as well as qualify for a teaching, administrative or supervisory position. The advantages of this scheme, as stated in the editorial, are as follows: the shortening of the period of training and the reduction of expense to the pupil would attract larger numbers; one class of nurse of high quality would be continued; better specialists would result from the planned postgraduate courses; and the care of the sick would be restored as the primary duty of the graduate nurse. This seems to be a logical approach to the problem.

The two-year graduate should not be considered as a substitute for the so-called "attendant nurse." The latter should be encouraged but never with the idea of having her take the place of an adequately trained young woman with at least a high-school education. The attendant nurse has a definite place, particularly in the home, but should not assume those responsibilities in bedside nursing for which she is unqualified by educational background and training. She and the registered nurse with the proposed two-year course of training should be complementary to each other.

By such measures, any state, especially those with a large number of small hospital training schools, should be able to provide enough young women adequately trained in clinical nursing to care for the sick in hospitals and homes. This two-year type of trained nurse does not need (nor would many desire) to be registered in all states. There would however be ample opportunities to provide further educational background for those who are able, willing and suitable for supervisory positions in hospitals, large or small. The trained attendant would take over from both classes of trained nurse many of the routine duties that are time consuming and the performance of which does not require a high-school education — let alone two or more years in a training school for registered nurses. A certain number of two-year graduates, by virtue of postgraduate study, and possibly of advanced preliminary education, would be qualified to assume highly responsible positions. The majority would be capable of rendering excellent bedside care, although they would not be permitted, under existing statutes, to take board examinations in many other states. Finally, the attendant nurse would assume many of the time-consuming routine duties that do not require skilled service.

MASSACHUSETTS MEDICAL SOCIETY

DEATHS

CROSBIE — Arthur H. Crosbie, M.D., of Boston, died August 23. He was in his sixty-ninth year.

Dr. Crosbie received his degree from Harvard Medical School in 1908. He was a consulting urologist at the Massachusetts Women's Hospital, Boston, and St. Elizabeth's Hospital, Brighton; and surgeon-in-chief, Department of Urology, Cambridge City Hospital, Cambridge. His memberships included the New England Surgical Society, American Association of Genito-Urinary Surgeons, American Urological Association and American College of Surgeons.

His mother and five brothers survive.

SARGENT — Ara N. Sargent, M.D., of Salem, died August 26. He was in his seventy-ninth year.

Dr. Sargent received his degree from Harvard Medical School in 1893. He was a member of the American College of Physicians and a fellow of the American Medical Association.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

POSTPONEMENT OF SCHOOL OPENING INADVISABLE

Every year the question comes up: Should school opening be delayed because of the incidence of poliomyelitis in the town or in neighboring towns? The Department of Public Health strongly urges that the schools be opened at the usual time and be kept open.

There is nothing to be gained by keeping the schools closed. Experience shows that spread of the disease is not prevented by any such measure. On the other hand, by keeping the schools open the child is under the observation of school physician, nurse and teacher in addition to that of the parents at home. In this way the early stages of infection are likelier to be detected, the child being isolated and brought under proper medical supervision. Missed cases too frequently result from the unsupervised mingling of children when schools are not in session.

BOOKS RECEIVED

The receipt of the following books is acknowledged, and this listing must be regarded as a sufficient return for the courtesy of the sender. Books that appear to be of particular interest will be reviewed as space permits. Additional information in regard to all listed books will be gladly furnished on request.

A Synopsis of Medicine. By Sir Henry L. Tidy, K.B.E., M.A., M.D., B.Ch. (Oxon.), F.R.C.P. (Lond.), consulting physician to St. Thomas's Hospital, London. Eighth edition, revised and enlarged. 12°, cloth, 1215 pp. Baltimore: Williams and Wilkins Company, 1945. $7.50.

This standard compendium, first published in 1920, has been thoroughly revised and brought up to date, especially in the field of therapeutics. The use of the sulfonamides has been incorporated into the sections on infectious diseases, and the chapter on the hemolytic anemias of the newborn has been rewritten in relation to the Rh factor. Many new disease syndromes have been included, and the discussion of other diseases has been amplified. Vitamin K is included for the first time, and there is a new article on sex hormones. Many articles have been extensively rewritten, resulting in an addition of about forty pages to the text. The work is well arranged and, although based on British practice, should prove useful to the practicing physician as a ready source of reference.

Lights Out. By Baynard Kendrick. 8°, cloth, 240 pp. New York: William Morrow and Company, 1945. $2.50.

This is the story of a blinded soldier and his conditioning in Army hospitals for a normal everyday life.

NOTICES

ANNOUNCEMENT

Dr. Lendon Snedeker announces his return to the practice of pediatrics at 319 Longwood Avenue, Boston.

METROPOLITAN STATE HOSPITAL

The twelfth Postgraduate Seminar in Neurology and Psychiatry will begin Friday, October 11. The program will be as follows: A review course in basic neurology and psychiatry, consisting of eighty-one lectures, to be held every Friday from 2:00 to 10:00 p.m. from October 11 to December 13, 1946, and from January 3 to April 25, 1947, at the Metropolitan State Hospital, 475 Trapelo Road, Waltham; a course in social and special psychiatry, consisting of thirty-six lectures, to be held every Wednesday from 5:30 to 10:00 p.m. from October 16 to December 11, 1946, and from March 19 to May 14, 1947, at the Boston Psychopathic Hospital, 74 Fenwood Road, Boston; and a course in pediatric neuropsychiatry (child psychiatry), consisting of twenty lectures, to be held every alternate Monday from 5:30 to 10:00 p.m. from October 14 to December 9, 1946, and from March 17 to May 12, 1947, at the Walter E. Fernald State School, Waverley.

The seminar is open to all graduate physicians, but the number of vacancies for demonstrations in the review course in basic neurology and psychiatry will be limited to twenty-five in each of the subjects of the course: neuroanatomy, neuropathology and neuroroentgenology. Those interested are requested to apply in writing before October 7 to Dr. William C. Gaebler, superintendent, Massachusetts State Hospital, Waltham.

SOCIETY MEETINGS AND CONFERENCES

Calendar of Boston District for the Week Beginning Thursday, September 19

Friday, September 20
*10:00 a.m.–12:00 m. Medical Staff Rounds, Peter Bent Brigham Hospital.

Tuesday, September 24
12:00 m.–1:00 p.m. Dermatological Service, Grand Rounds. Amphitheater, Dowling Building, Boston City Hospital.
*12:15–1:15 p.m. Clinicoroentgenological Conference. Peter Bent Brigham Hospital.

Wednesday, September 25
*10:30–11:30 a.m. Medical Clinic. Isolation Building Amphitheater, Children's Hospital.
*12:00 m. Clinicopathological Conference. (Children's Hospital.) Amphitheater, Peter Bent Brigham Hospital.
*2:30–4:00 p.m. Combined Clinic by the Medical, Surgical and Orthopedic Services. Amphitheater, Children's Hospital.

*Open to the medical profession.

March 15–September 15. Boston University Course for Discharged Medical Officers. Page 240 issue of February 14.
September 16–18. American Diabetes Association. Page 284, issue of August 22.
September 23. Diabetes Clinic. Page 314, issue of August 29.
September 30–October 2. Congress on Industrial Health. Page 284, issue of August 22.
October 6–12. Interamerican Congress of Cardiology. Page xix, issue of June 6.
October 7–12. Seminar in Legal Medicine. Page 206, issue of August 8.
October 7–18. New York Academy of Medicine. Page 544, issue of April 18.
October 9–11. Association for Military Surgeons. Page 346, issue of September 5.
October 10. The Present Status of Sympathectomy in Hypertension. Dr. Reginald Smithwick. Pentucket Association of Physicians. 8:30 p.m. Haverhill.
October 11–May 14. Metropolitan State Hospital. Notice above.
December 5. Suffolk Censors' Meeting. Page 346, issue of September 5.
February 7. American Board of Obstetrics and Gynecology. Page 238, issue of August 15.
April 28–May 2. American College of Physicians. Page 206, issue of August 8.

District Medical Societies

PLYMOUTH

October. Jordan Hospital, Plymouth.
November. Plymouth County Hospital, South Hanson.
January. Brockton Hospital, Brockton.
February. Moore Hospital, Brockton.
March. Goddard Hospital, Brockton.
April. State Farm, Bridgewater.
May. Lakeville Sanatorium, Lakeville.

SUFFOLK

December 5. Censors' Meeting. Page 346, issue of September 5.